
CITIZENS

Paul & Mary
Gloger

Jim Murphy/R1/USEPA/US@EPA

To

cc

10/01/2009 07:23
PM

Subject
Provisions for wildlife during
Housatonic remediation

What I do not hear enough headline concern about, is the impact any remediation plan will have on the animals that are at home in and along the river at the time that the plan is implemented.

What provisions are being made for the animal life as people and machinery invade and destroy their habitat, their occupied burrows, and their nests? Will there be a rescue center for sanctuary for those left homeless and perhaps injured?

The river's watershed and Canoe Meadows are such an important home to such a huge variety of wildlife whose lives are in balance now because of the habitat as it currently exists. Have any of the studies that have been done document the present, successful wildlife habitat and its

occupants thoroughly enough to understand and plan for what is needed to replicate it?

We can attempt to improve, to a degree, the water quality BUT we must consider as equally important the great responsibility for preserving this wildlife haven with minimally invasive remedial methods.

Mary Patricia Gloger

Pittsfield

"Linda Lapointe"

10/19/2009 12:13
PM

Jim Murphy/R1/USEPA/US@EPA

To

cc

Subject

rest of the river

Thanks for soliciting public comment. I was disappointed with the original cleanup process e.g. the expense, the drastic changes to the river, overgrown vegetation, lack of maintenance for entry, debris collection and disposal, etc. This new proposed plan sounds more responsible and realistic. Here's hoping! Linda Lapointe

CITY GOVERNMENT



The
City of
Pittsfield
MASSACHUSETTS

Mayor James M. Ruberto

October 23, 2009

James Murphy
EPA Community Involvement Coordinator
c/o Weston Solutions
10 Lyman Street
Pittsfield, MA 01201

Dear Mr. Murphy,

On behalf of the City of Pittsfield and all of our residents, especially those along the Housatonic River, I would like to take a moment of your time to express our thoughts on the future of this very important natural resource.

The river is very unique, and the cleanup method for the rest of the river should not be the same as for the first two miles of the river in Pittsfield; the bank-to-bank dredging, river capping, and digging up of vernal pools will completely change the ecological makeup of the river, reversing the progress that has naturally occurred thus far.

The Housatonic River has been a vital part of all communities that it runs through for generations. I know we need to use a 'common sense' approach to protect our residents' health, make the river safe for recreation, and preserve the natural flora and fauna that call the Housatonic River home. What I am unsure is how this cleanup is to be achieved, but with community input, the EPA's expertise, and GE's cooperation, the River will be enjoyed generations to come.

Moving ahead, I look forward to working with the EPA to find a way to create an environmentally and community friendly solution. Thank you for taking the time to seek community input on this very important issue and please do not hesitate to call my office at (413) 499-9321, if you would like to have further discussions.

Sincerely,

A handwritten signature in black ink, appearing to read "James M. Ruberto".
James M. Ruberto

NON-GOVERNMENT GROUPS

BERKSHIRE COUNTY LEAGUE OF SPORTSMEN

25 Delancy Ave
Pittsfield MA 01201
413-499-8482



October 13, 2009

Jim Murphy
EPA Community Involvement Coordinator
c/o Western Solutions
10 Lyman Street
Pittsfield, MA 01201

Dear Mr. Murphy;

I write you this letter after a unanimous vote from the membership of the Berkshire County League of Sportsmen, (BCLS) an organization with just over 3000 members of organized sportsmen and sportswomen in Berkshire County.

This letter will voice our concerns with the Housatonic's "Rest of the River" clean-up, an area that includes the confluence, down through Woods Pond. Activities by residents and tourists to the Berkshires include along this vast stretch of the river; hunting, fishing, trapping, hiking, canoeing/kayaking, bird watching, photography and other various forms of wildlife viewing. Bearing all this recreational activity in mind, The BCLS recognize that the clean up from the confluence to Woods Pond will require a long period of time, millions of dollars to complete, and will most likely change in design from time to time during the entire clean-up process. Thus, the clean up will undoubtedly interrupt if not end, many of these forms of recreation and life styles for long periods of time along the river.

After researching, watching and listening to the GE proposed clean-up, a part that has the attention of the membership of the BCLS the most, is the fact the a certain amount of dredging is proposed in order to facilitate a clean up. This stretch of the Housatonic River holds large varieties of wildlife that are both game and non-game species. This portion of the river also serves as the largest wetland area in the Commonwealth west of the Connecticut River. This wetland region also acts as a nesting and respite area for migratory birds and has numerous rare and endangered species of plant and wildlife throughout its boundaries.

The BCLS will not support dredging of the Housatonic River except for targeted areas, such as Wood's Pond, an area of the river that has become shallow due to the filling in of silt. An area that has become a sink for the entire river's PCB's. We do not want to

see a remediation plan put into place like the one that was used in the first part of the river's clean up, where effectively the river was turned into a sluice pipe and now represents a commercial drainage area. This area of the river has some of the most diverse habitat for its wildlife which includes a migratory corridor, heavily used public recreation areas that includes three and half (3.5) miles of designated "catch and release" waters, lands that provide agricultural productivity and approximately twenty two (22) miles of cold water fisheries resources.

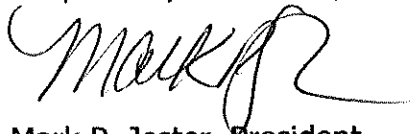
An issue that was brought to our attention recently, is the fact that the river's original channel through Woods Pond has moved from it's original location of the east side of the pond to the west side over the last sixty five (65) plus years. This movement happened in part because of all the silt that was deposited into the waterway and the speed of the river going into Woods Pond. In GE's presentation, there appears to be no mention of rectifying this issue.

If and when dredging happens along the river in the Pond, our concern is that the PCB's in that stretch will be stirred up and with the speed of the river, we feel that it will be inevitable that there will be further downstream pollution as a result. We would like to propose that baffles be installed to slow the water entering Woods Pond and move the rivers current channel back to the west bank. The result will be less of a silt build up, and reducing the possibility of further PCB contamination down stream.

The BCLS is not in favor of an aggressive remediation plan. We want a deliberate, stepwise sequence, showing less impact. We would also like to see a slower sequence that will allow habitat along the river bank to grow and provide shade for the fishery and cover for the various wildlife along the river's edge and embankments before large areas further down stream are opened up to restoration. We want a plan that will allow for the study of alternate remediation technology, and an adaptive management process.

The BCLS would support a less invasive clean up of this pristine section of the Housatonic River. Its appeal to fishermen and sportsmen, its importance to migratory birds and other forms of wildlife, its natural beauty and environmental significance, personifies what the Berkshires and this river means to residents and tourists alike.

Respectfully Submitted,

A handwritten signature in black ink, appearing to read "Mark P. Jester", with a stylized flourish at the end.

Mark P. Jester, President
Berkshire County League of Sportsmen

Public Comments from Citizens For PCB Removal

on

General Electric Company's Work Plan for Evaluation of Additional Remedial Alternatives for the Rest of River portion of the Housatonic River Which was submitted as an addendum to GE's Corrective Measures Study (CMS) Proposal for the Rest of River

October 23, 2009

We are very disappointed to read this Work Plan and see that the same old, same old terms are still being used: "Soil and Sediment Removal", "Metal Sheetpiling*", "Soil Backfilling" and "Capping", to describe the same old, same old methods. Even where "Alternative" methods are discussed, from what we can tell, these are simply a variation of the above with different depths and techniques applied to essentially the same old process.

While, as our name states, we are in favor of *the removal* of PCB's from the Housatonic, its riverbed, banks and floodplains; it should not, however, be interpreted to mean we are satisfied with the tired, disruptive, and draconian measures of dredging and soil replacement, especially since this involves putting Berkshire County's legacy of Environmental Sins upon the shoulders of some other community in some other location. We are opposed, have always been opposed and will always be opposed to the trucking, and disposal dumping of these toxic soils in landfills anywhere in this great nation and beautiful world of ours.

At the same time, we are disappointed, although not surprised, to see, once again, GE's attempt to do nothing, i.e. "Monitored Natural Recovery" as listed on page 2-5. Doing nothing is not an option, and should neither be considered nor allowed.

Despite years of lobbying EPA and DEP, we see no mandatory inclusion of any kind of test pilot study for alternate measures of removing PCB's and the other toxic chemicals found at this site such as the "Earthworm Enzyme" process, newer, safer Thermal Desorption, or any other *cutting edge* treatment. We have made our wishes clear on this time and time again, and are greatly discouraged that, despite pleas for our "support" from the government agencies, they have once again let us down in this regard.

Our goal is, and always has been the safe and least disruptive method of removing or neutralizing the PCB's and other toxins, preferably in situ, while giving the cleanest results, as measured by both soil depth and concentration of the contaminants so as to provide future generations of both wildlife and humans with a swimmable, fishable (i.e safe removal of the Fish Advisories), LIVEABLE River. While we accepted that some dredging might be necessary to achieve that goal, the fact that no other method is included is disheartening and unacceptable.

Promising to "restore" the river afterwards is simply not good enough.

Therefore, Citizens for PCB Removal wish to go on record as REJECTING this proposal as not meeting our aforementioned and many times previous re-iterated goals.

Respectfully submitted,
Citizens for PCB Removal
Barbara Cianfarini
Charlie Cianfarini
Thelma Barzzotini
Executive Committee



* Corrected term from email version

TO: Susan Svirsky
U.S. Environmental Protection Agency

FROM: Eleanor Tillinghast
Green Berkshires, Inc.

DATE: 10/24/09

RE: Comments Submitted for General Electric Company's
Work Plan for Evaluation of Additional Remedial Alternatives

Thank you for this opportunity to comment on the General Electric Company's Work Plan for Evaluation of Additional Remedial Alternatives. Our comments relate to several of the evaluation criteria for the alternatives under consideration in the Work Plan and the Corrective Measures Study.

Our comments are primarily in the form of queries because we don't feel we have adequate information at this point to select preferred alternatives, in some cases because the information may not be available yet, and in other cases because there is so much information it's unrealistic to expect people to sift through all of it to understand fully the risks during and after any cleanup alternative and the benefits of each alternative.

I. General Standard: Compliance with Federal and State ARARs (or a basis for ARAR waiver.)

We appreciate the fact that in the Work Plan, GE states that, as requested by EPA, in its analyses of ARARs, it "will take into account the implications of the Commonwealth's designation of the Upper Housatonic River as an ACEC." We assume that includes the associated landscape within the Primary Study Area.

After a great deal of research and analysis, we have concluded that the ACEC law and associated regulations qualify as ARARs, and we look forward to a commitment from EPA to that effect.

II. Selection Decision Factor: Short-Term Effectiveness.

We do not believe that the impacts to nearby communities and workers, and the environment during implementation of any of the alternatives have been adequately explained in the CMS or the Work Plan.

A. There is no analysis within the CMS or the work plan about the possibility of increased human health risks during the removal, transport, and storage of soils and sediments contaminated with PCBs. The cleanup plans range from 7 to 51 years, and all can be expected to release PCBs into the water and air. The HHRA notes that "human

exposure can result...by inhaling PCBs that volatilize from [contaminated surface water, sediment, and soil, sediment] into the air.”

Even though the PCBs in the Housatonic River tend to be highly chlorinated and thus more stable and less likely to volatilize, and even though human exposure to airborne PCBs has been discounted so far as either a cancer risk or hazard risk, we have heard that levels of PCBs have increased during the cleanup of the Hudson River, and we believe this possibility should be considered in greater detail in the final CMS, both for people who live in the area, and those who recreate there or downstream. Resuspension of PCBs in the surface water throughout any of the alternatives, particularly for people who live and recreate downstream, should be examined more thoroughly, too.

Furthermore, what will be the health effects of the equipment within neighborhoods adjacent to the cleanup areas? These neighborhoods could experience elevated air pollution levels, noise pollution levels, and other forms of disruption for many years, and those factors should be considered for each alternative. GE has done calculations of mileage, truck trips, and the carbon footprint for each alternative, but that information needs to be translated into actual cumulative impacts upon residents and neighborhoods over time.

B. Although people working on the cleanup have not received much attention in public discussions about impacts, this selection decision factor does include workers, and there should be more information about impacts to them during the time they are involved in the cleanup. For example, a worker using dredging equipment and working in the riverbed or floodplain during a seven-year period (the shortest for any of the alternatives) could have significant exposure to contaminated soils and sediments, and even to resuspended PCBs in the surface water or volatilized in the air. It's very possible that some workers will live in the Housatonic River Area, or even within a half-mile of the river, so their cumulative exposure during any of the cleanup alternatives should be considered.

C. In our opinion, the CMS and the Work Plan do not account adequately for the impacts to wildlife during the work involved in any of the alternatives. Particularly because the minimum time frame for GE's Ecologically Sensitive Alternative or any other cleanup alternative of SED 3 or higher is seven years, the impacts to wildlife during the cleanup process will be significant, in fact, they could be lethal.

An analysis of the likely impacts to each of the dominant wildlife species, particularly those listed as endangered, of special concern, or threatened by the state or federal governments, should be included for each alternative.

III. Selection Decision Factor: Long-Term Reliability and Effectiveness.

In weighing the risks and benefits of any alternative, the success of restoration techniques is a key factor. In other words, what are the long-term benefits, and are those worth the

shorter-term impacts? The long-term benefits would be to human health, to wildlife health, and to the health of the river system itself.

The residual risk, adequacy and reliability, and any potential long-term adverse effects of the disposition of PCB contaminated soils and sediments should all be factored into evaluations of all the alternatives.

A. For this cleanup, the cancer risk range used by EPA is 1 in 10,000 to 1 in 1,000,000 over a 70-year lifetime. If the cumulative site risk to an individual exceeds 1 in 10,000, then a cleanup action is generally warranted.

The Human Health Risk Assessment (HHRA) found that certain types of exposures, particularly when considered cumulatively, ranked within that cancer risk range. Consuming fish and waterfowl each ranked above the cancer risk range, and presented the greatest risks to human health. In fact, consumption rates for fish and waterfowl have a greater influence on risk than any other exposure variable.

That is important information, but the HHRA also noted that, no matter the exposure category, serum PCB concentration increases with age. In fact, the Information Booklet for the Final Report on the Housatonic River Area PCB Exposure Assessment states that “Age was found to be the prominent predictor of serum PCB level.” That latter study was done of a representative sample of 800 households located within one-half mile of the Housatonic River in eight communities. While it’s possible that the people in all those households have lived in the same spot all their lives, it’s also possible that those residents are exposed to PCBs in other ways than simply being within the PSA of the Housatonic River.

So our question is: has the EPA or GE produced or reported any studies of human health that control for PCBs and other toxins from other sources? In other words, if PCBs are removed from the PSA at the level of SED 3 or higher, will the overall health of people who live in the Housatonic River Area and of those who live within a half-mile of the river be demonstrably better? Will their risk of contracting cancer decline to a statistically significant degree?

This is important information for people trying to balance the risks and effectiveness of any cleanup scenario, and we believe the information should be included explicitly as part of the evaluation of each alternative.

B. We do not believe the CMS and the Work Plan account adequately for the impacts to wildlife and plants after the work involved in any of the alternatives.

Right now, it appears that the local populations and communities of many plants and animals are thriving, despite the fact that PCBs have been in the river for some 70 years.

If a state-listed species is extirpated in the PSA during the cleanup, how will it be re-introduced, how will its survival be assured? Will varieties be imported from other

places? Will healthy specimens in the PSA be removed before the cleanup begins and then reproduced in captivity until conditions allow them to be reintroduced to the spot where their species originally resided in or around the river? To what extent have any re-introduction scenarios been successful elsewhere after the periods of time and the degree of soil and sediment removal expected under any of the cleanup alternatives?

It should be noted that we question how any of the cleanup alternatives beyond the first two (no action and monitoring) will be sufficiently protective of local populations and communities of state- and federally-listed species, and we would like to see much more information on methods in the revised CMS.

As requested earlier regarding impacts on humans, we want to understand how the EPA has controlled for other negative environmental impacts on wildlife. For example, frogs around the world are displaying deformities that are related to their environment. Is the percentage of malformed frogs in the Housatonic River and its floodplain statistically higher than in other parts of the world? To what extent are the ducks with elevated PCB levels feeding primarily along the Housatonic, and to what extent are their toxin levels related to other rivers or environments that they might visit? Again, as people weigh the alternatives, it will be helpful to have a better understanding of how much will be gained for wildlife after each of the alternatives has been completed.

C. The Human Health Risk Assessment states, appropriately, that “the Rest of River portion of the Housatonic River flows through one of the most biologically diverse regions of Massachusetts.” The extraordinary nature of the river and its surroundings was a strong reason for the designation of the Upper Housatonic River ACEC.

We agree with the statement in the HHRA, and we believe that the science supporting it should underlie evaluations of the effects of all the alternatives on the river system itself. Our comments on impacts to wildlife are relevant to the entire river system within the Rest of River, but it deserves its own focus.

As many people have noted, the Rest of River is extremely different from the first two miles of the river within Pittsfield that were cleaned earlier. Those two miles had been channelized by the Army Corps decades ago, and pass through an urbanized landscape that has, to varying degrees, been degraded environmentally.

The river in the area to be cleaned under the CMS meanders through an extensive floodplain, and supports a complex interconnection of wildlife and plants. Exactly how restoration will occur and be measured for each of the alternatives is one of our greatest concerns. We have not seen enough evidence to agree with the assumptions that the river and its surroundings can be restored to meet the standard of predisturbance characteristics and functions.

D. Disposition of the soils and sediments contaminated by PCBs is a major factor in evaluating the long-term impacts on human and environmental health. Treatment of any contaminated materials removed from the PSA should be the first priority. If treatment is

not going to take place, then it seems as though there are three options: to leave the PCBs in-situ, to remove and store them in a landfill locally, or to remove and ship them to a distant location out of the area.

For the second option, Hill 78 is not a reassuring example of how EPA handles the storage of such materials. For the third option, we have the example of PCBs dredged from the Hudson River being shipped to a poor community in Texas. In the revised CMS, there should also be a thorough analysis of the disposition alternative of leaving the all PCBs where they are. There should also be an analysis of alternatives that entail leaving some PCBs in certain portions, and removing them in others. While it could be said that any of the alternatives effectively leaves some in place, we are asking that the evaluation be done from the point of view of the long-term effect of leaving them in place versus removing them. In other words, if, for example, SED 3 achieves a 90% reduction in PCB transport, what is the statistically significant effect of continuing a 10% level of PCB transport into the foreseeable future?

Overall, we are concerned about the difficulty for the public to independently evaluate the risks and benefits of each clean-up alternative described in the CMS and the Work Plan.

The documents that have been produced in preparation for selecting a cleanup alternative are voluminous both in size and quantity. The Human Health Risk Assessment alone is seven volumes, and the first volume alone is 1,131 pages. In practical terms, this makes it impossible for people to evaluate realistically the temporary and long-term risks and the benefits of any of the alternatives.

We request that the revised CMS include a matrix that clearly outlines each alternative with its associated short- and long-term risks and its benefits, so that everyone can determine for themselves which tradeoffs are worthwhile for the river.

We also request that the revised CMS include a detailed explanation, analysis, and comparison of the PCB cleanup and its impacts now underway in the Hudson River.

Housatonic Environmental Action League, Inc.

Post Office Box 21, Cornwall Bridge, CT 06754-0021

860-672-6867

October 23, 2009

Susan Svirsky, Rest of River Project Manager
United States Environmental Protection Agency
c/o Weston Solutions
10 Lyman Street
Pittsfield, MA 01201
facsimile: 413-442-4447

Sent via email: svirsky.susan@epa.gov and murphy.jim@epa.gov

RE: Informal Comments

EPA GE/Housatonic River Site

Rest of River (GECD850)

General Electric Work Plan for Evaluation of Additional Remedial Alternatives

August 31, 2009

Dear Ms. Svirsky,

The Housatonic Environmental Action League, Inc. (HEAL) is a broad-based, 501(c)(3) non-profit grassroots conservation organization advocating for a real clean-up of PCBs and other toxic substances from the Housatonic River watershed. Our members include, among others, sportswomen, conservationists, community leaders, health-care providers, watershed property owners, educators, parents and concerned residents from the tri-state region.

Not unlike almost every document at this site that is open for formal/informal public comment, HEAL, along with other stakeholder groups, found it necessary to again request that EPA provide an extension to the too brief comment period. Every presentation and update provided by EPA, other agencies and General Electric that is scheduled for a MA-based Pittsfield Citizens' Coordinating Council (CCC) meeting, must have a corresponding and timely presentation to the CT Subcommittee of the Pittsfield CCC at a venue somewhere within the CT Housatonic watershed. For this document and its corresponding open comment period, it was necessary for HEAL to request such a presentation in CT that was finally scheduled for October 21st at Kent Town Hall...only 48 hours before the deadline of public comment. Both the Pittsfield CCC and the CT Subcommittee deserve regularly scheduled meetings during this important time when Rest of River Corrective Measures Study and its associated documents are being molded and decided.

HEAL has read and endorses the October 21st comments on the above named document submitted by Dr. Peter deFur of Environmental Stewardship Concepts on behalf of The Housatonic River Initiative (HRI). HRI is the citizen stakeholder organization chosen and awarded by EPA as the sole recipient of this Superfund site's Technical Assistance Grant. Dr. deFur is one of HRI's technical experts who reviews and comments on many of this site's

documents and is compensated from proceeds of HRI's TAG. HEAL and HRI work closely on the PCB-containment issues relating to the Housatonic River site and have collaborated for 13 years on many educational presentations and forums.

EPA has completed two of the most comprehensive and exhaustive (and damning) peer reviewed risk assessments ever conducted at a PCB-contaminated site in the United States for the heavily contaminated MA portion of the Housatonic River. In stark contrast, the PCB-contamination in the CT section of the river was all but ignored by the State of CT's Department of Environmental Protection during the period of the Consent Decree negotiations. As a result of CT DEP's unwillingness to aggressively and effectively advocate for the Housatonic River, its wildlife inhabitants and the citizens who care about the river, the EPA was able to bypass adequate and thorough contamination characterization and data collection in CT in favor of the Commonwealth. It comes as no surprise that General Electric has been allowed to select Monitored Natural Recovery (a euphemism for "Do Nothing") for the solution to the contamination throughout the entire section of the river, floodplain and impoundments in CT.

With each new document and next step in the Rest of River process, it is becoming more evident that the RP for this site does not acknowledge, agree with or respect the findings of grave health risks that are clearly demonstrated in EPA's Human Health Risk Assessment and Ecological Risk Assessment for the Primary Study Area. Neither does the RP take seriously specific mandatory requests by EPA, as evidenced by their extended stalling in identifying potential sites for an upland toxic dump for the disposal of contaminated river sediments to be located somewhere in the MA Berkshires. If the RP continues to refuse to accept its responsibility under the terms of the negotiated settlement to the resource that they knowingly destroyed, HEAL looks forward to the time when EPA uses the power found within the HHRA and the ERA to take complete control of the site, ask the RP to step aside and move forward under the CERCLA/Superfund law to affect remediation and PCB-containment solutions. Allow the indisputable HHRA and ERA findings to speak for themselves in a federal judicial scenario as the Agency and other interested and devoted stakeholders proceed to work towards healing the Housatonic.

In the absence of yet another EPA Unilateral Administrative Order under Section 106 of CERCLA/Superfund law, similar to the order filed against GE in 1996, forcing them to address the first 1/2-mile of PCB-containment in the river and along the riverbanks by their now-defunct plant in Pittsfield, HEAL suspects that GE's foot dragging on Rest of River will persist.

HEAL continues to support the "Ten Principles for a Better River Clean-up" as the work proceeds into Rest of River:

1. Long-term health and environmental goals for the project should be described clearly and simply at the beginning of the clean-up.
2. Areas of contamination should be attacked a few at a time in phases rather than all at once.
3. Each phase should include pilot projects to test new technologies.
4. Plans should be reviewed and revised at the end of each phase.

5. The community should have a formal and substantial role in planning each new phase.
6. Planning for each phase should be guided by limits on environmental disruption and cost established at the beginning of the process.
7. A comprehensive health study should be conducted by an independent body, and the results of that study should influence planning and priorities.
8. The entire river, including areas downstream in Connecticut, should be evaluated for remediation in each phase.
9. Sources of continuing contamination of the river should be identified, evaluated, and remediated.
10. If the EPA mandates dredging, lined, upland landfills should be utilized only as purely temporary measures.

Furthermore, HEAL strongly encourages EPA to implement the Precautionary Principle in every step and every decision, always erring on the side of caution when even a potential threat, now or in the future, to the environment or human health presents.

The Work Plan needs to include indefinite monitoring, monitoring, monitoring...to insure that the river is not becoming recontaminate by inadequate source controls or ineffective and archaic in-river temporary remedies such as caps.

General Electric's Work Plan variables state that the consumption of fish and other biota found within the system will continue to be unsafe to eat even after approximately 60-years and in the presence of their proposed remedy. The Work Plan in its current form is unacceptable and should be rejected by EPA. GE's Work Plan does not bring us a fishable, swimmable and livable river.

HEAL appreciates every opportunity to provide EPA our comments and input.

Respectfully submitted,

Judy Herkimer

Lynn Fowler
Housatonic River Commission
Canaan, CT

Comments on the CMS

October 23rd, 2009

To: Jim Murphy
EPA Community Involvement Coordinator
murphy.jim@epa.gov

Dear EPA,

Thank you for your hard work on behalf of the Housatonic River. I know that this is your "job", however I feel that it has become more than that. The Citizen's Coordinating Council meetings have brought the stakeholders together with G.E., the MADEP, MADEPH and the EPA and through the years have reached a level of understanding about all of the problems we face in getting the PCB's out of the Housatonic River environment. I am impressed by the environmental expertise of the EPA and by the engineers from EPA and G.E. in dealing with this complex ecosystem.

The "rest of river" will need not only the experience of the EPA in dealing with sensitive ecological areas (vernal pools, etc.) but their engineers will need to work with Andy Silfer and the other fine engineers at G.E. to do their best to get as much of the PCB's as possible out of the floodplain, a unique engineering challenge no matter how much time and money go into it.

General Electric's major disagreements with the EPA over the CMS seem to be based on four things; how long the "clean up" will take, how much sediment will be excavated, how many staging areas will be needed and how much it will cost. Compromises will be made or money and time will be wasted in court. To allow as long as 27 years for this massive "clean up" is realistic and the number and placements of staging areas can be worked out. As for sediment and cost, the use of Chemical Extraction and Thermal Desorption will result in a large reduction of the volume of contaminated material and as time passes the cost of these technologies should go down.

The EPA's Floodplain Alternatives (FP 8) or (FP 9) and their Sediment Alternatives (SED 9) or (SED 10) should be implemented with as little compromise as possible.

All my best wishes and hopes that the EPA and G.E. can work together to get us a cleaner river, Lynn Fowler

Comments on
GE-Pittsfield/Housatonic River Site
Rest of River (GECD850)
Work Plan for Evaluation of Additional Remedial Alternatives

Prepared on behalf of
The Housatonic River Initiative

By
Environmental Stewardship Concepts
21 October 2009

Document Description:

Based on the information in the Work Plan, we created a table (below) that outlines the proposed alternatives. As you can see, SED9 and the ESA, both introduced for the first time in this Work Plan, do not make clear the specific concentration of PCBs they are trying to achieve by removing to the depths they have chosen. All three alternatives would require MNR, and none of the alternatives would create an environment safe enough to ever lift the fish consumption advisories. The ESA actually has more than twice the number of access roads than SED9, despite the fact that access roads are explicitly detrimental to habitats because of fragmentation.

	SED8	SED9	ESA
<i>CY of sediment removed</i>	2,250,000	859,000-922,000	265,000
<i>Acres backfilled</i>	340	None	
<i>Acres capped</i>	0	336	
<i>Miles of access road and # of staging areas</i>	21 miles and 29 staging areas	4 miles and 19 staging areas	9.5 miles and 11 staging areas
<i>Reach 6 (Woods Pond)</i>	6 ft removal depth, to 1mg/kg	3.5 removal depth in shallow areas + 1 ft cap; 1 ft removal depth in deep areas + 1 ft cap to grade	Sediments in top 2.5 ft that contain concentration >13mg/kg in top 6 inches (169,000 cy); no cap or backfill
<i>Reach 5A</i>	4ft removal depth, to 1mg/kg	2ft removal depth + 2 ft cap	2ft removal depth in selected areas + 2 ft engineered cap (66,000 cy); 3400 cy of bank soil removed and stabilized
<i>Reach 5B</i>	3.5 ft removal depth, to 1mg/kg	2 ft removal depth + 2 ft cap	
<i>Reach 5C</i>	3 ft removal depth, to 1mg/kg	2ft removal depth in shallow areas; 1.5	N/A

		removal depth in deep areas + engineered cap to grade	
<i>Reach 5 backwaters</i>	2-3 ft removal depth, to 1 mg/kg	Cap at water depths >4ft; 1 ft removal depth + 1ft cap at water depths <4ft	N/A
<i>Reach 7 impoundments</i>	2 ft removal depth, to 1 mg/kg	1.5ft removal depth in areas of higher bottom stress* + cap to grade; 1 ft removal depth in areas of lower shear stress* + cap to grade	N/A
<i>Reach 8 (Rising Pond)</i>	7ft removal depth, to 1mg/kg	1.5ft removal depth in areas of higher bottom stress* + cap to grade; 1 ft removal depth in areas of lower shear stress* + cap to grade	N/A
<i>Areas for MNR</i>	Remaining areas of rest of river	Channel portions of reach 7 and river stretches downstream of reach 8	All areas not ID'd for removal
<i>Years to Implement</i>	51	27	7
<i>Fish still contaminated?</i>	Yes	Yes	Yes

General Comments:

1. So long as there are fish consumption advisories, any option fails to meet CERCLA's criterion 1: Overall protection of human health and the environment. The Work Plan does not meet the law that requires meeting standards of protection of human health and the environment.
2. The document never mentions source control. Taking the time and money to remediate these soils and sediments without putting a stop to the pollution at the source (via regulation of stormwater, runoff, industrial permitting, etc) will be a fruitless endeavor. GE certainly seems not to want to do this cleanup; doing it more than once would be even more of an ordeal. Why not do the cleanup right the first time by taking into account the sources of the pollution and addressing them to prevent recontamination?
3. The Work Plan does not address how SED 9 would achieve a site safe for the public. For FP 8, backfill would replace the floodplain soil that is removed in order to "achieve the RME IMPGs for human health protection based on 10^{-5} cancer risk or non-cancer HI of 1 (whichever is lower)" (2-16). There is no such statement in the document to show why SED9 would be an effective alternative.

4. The only exposure pathway evaluated in the Work Plan for most scenarios is direct contact, apart from fish consumption. The Work Plan does not take into account incidental ingestion or inhalation and how these pathways affect the Risk Assessment. As a result, all of its risk assessments are not satisfactory in protecting human health.
5. The estimated time of implementation would seem to include the construction of the roads and equipment stage areas, but this inclusion is not explicitly stated in the work plan.
6. The Work Plan does not give the percent annual PCB reduction if the ESA is the selected alternative. The Work Plan should include how that prediction will be made for the ESA. For SED 8 it is 98% in Woods Pond dam, 97% at Rising Pond dam, and 99% at Reach 5/6 floodplain. The information for the ESA is missing so there is not a balanced basis for comparison of the various alternatives.
7. GE's CMS Proposal gives a summary of adverse impacts on habitat for all SED alternatives as well as the percent annual PCB reduction. What about SED 9 and the ESA? The Work Plan is not a true "addendum to GE's Corrective Measures Study," as it is described in Andrew Silfer's letter to Susan Svirsky prefacing the Work Plan. It needs to include plans to acquire and present all of the same information provided for the first set of alternatives in the CMS. As written currently, the Work Plan is missing estimates to be completed for the following: (1) the percent annual PCB reduction for the ESA and (2) the summary of adverse impacts on habitat for SED 9 and the ESA.
8. This Work Plan needs to include references to research about levels of PCBs in habitat and the effects on ecosystems. This report is saying that the primary goal is preservation of the sensitive habitat, but keeping it intact will not necessarily keep it safe if the PCBs remain in the soil and water and are therefore available to the rare species.
9. The Work Plan does not give the approximate reduction of toxicity, mobility, or volume of wastes for the ESA, SED 9 or, FP 8, which is one of the selection decision factors listed in the Work Plan's Methodology for Evaluation (page 3-1). These alternatives cannot be adequately evaluated without listing how effective they will be in comparison to the alternatives given in the CMS. The Work Plan must provide for how this information will be developed and presented in the revised CMS.
10. The Work Plan makes no provision to include *in situ* treatment options. This omission is especially problematic for the ESA evaluation. *In situ* treatments, if effective, will be able to reduce or eliminate toxicity without removing soils, sediments or streambanks. If available, *in situ* treatment options are available, the method should focus on streambanks where removal of substrate will have direct impacts on the aquatic ecosystem.

11. This work plan has no provision for determining the cleanup in the Connecticut portion of the Housatonic River. After decades of release of PCBs into the river, measurements (few) of PCBs in the CT portion of the river, and continuing fish and animal consumption advisories, there is ample evidence that the PCB contamination downstream continues to present threats to human health and the ecosystem. The work plan needs to estimate what actions will be taken to identify and remediate the contamination in Connecticut. These measures need to include sampling in backwater areas, behind the dams at multiple depths and on stream banks where flooding has deposited sediments freshly washed downriver from Reaches 1-5 in Massachusetts.
12. GE continues to incorporate monitored natural recovery into its cleanup plans, despite the fact that there are no data to support MNR as anything more than a Do-Nothing strategy. The Housatonic River Initiative and the community will not accept a remediation alternative based on MNR. To date, there have been no studies concluding with certainty that natural recovery is an effective means of remediation. The problem with MNR is that there is no evidence that it works either a) to cover the sediments with a sufficient layer of clean sediment, or b) to isolate the contamination to the point where the chemicals do not move into the aquatic food web. These two processes are related but not at all the same. The first process is the physical burial of sediments with freshly deposited sediment. The second process is preventing movement of contaminants into the food web. This second process may also be considered the absence of biological activity that brings contaminants up to the surface from below. Burial can be predicted (more or less) from some models and measured information on sedimentation. Isolation is not so easily predicted and there is not a “model” to help predict. MNR is based on the depositional nature of larger waterways. Over time, sediments from upstream are deposited in contaminated locations, theoretically isolating the pollutants on the stream or river bottom from the water column and wildlife over time (EPA 2005). Once isolated, the pollutants can then begin to degrade. Regulatory officials evaluate on a site-specific basis the amount of time that it takes for the pollutants to break down which depends on a number of variables such as sediment chemistry (% organic carbon, etc.), the constituents and concentrations of the chemical mixture in question, and temperature. Often, the timeframe selected is greater than 20 years. Currently, there are no sites where MNR is in use that have implemented the remedy for the amount of time required to be called successful.

The two most effective processes for the natural degradation of POPs like dioxins and PCBs are exposure to sunlight and decomposition by some anaerobic bacteria. Anaerobic (no oxygen) metabolism by microbes has been shown to have a limited ability to dechlorinate toxic POPs (Adriaens et al 1995, Ballerstedt et al 1997, Barkovskii and Adriaens 1996, Bedard et al 2007). Unfortunately, when the compounds are bound to sediments this ability is greatly reduced (Albrecht et al 1999). The US EPA has acknowledged these limitations in their assessment of monitored natural recovery, *Monitored Natural*

Attenuation: USEPA Research Program - An EPA Science Advisory Board Review. Light does not have the opportunity to act on PCBs during MNR since the principle behind the approach requires that contaminated sediments be buried and isolated from the environment over time. However, when the sediments are isolated in this fashion it prevents sunlight from reaching and breaking down contaminants. Therefore, once PCBs are bound to sediment and subsequently buried, they are effectively isolated from any natural processes that work to break them down.

As mentioned, there is little information to support the long-term effectiveness of MNR. Preliminary data indicate that these techniques may not be as effective as predicted. One example is the James River in Richmond, VA. Illegal dumping of the pesticide Kepone contaminated the river and resulted in a ban on fishing in 1975. The pesticide is incredibly toxic and also stable in the environment in ways similar to PCBs and dioxins. The ban was replaced in 1988 with a fish consumption advisory that remains in place to this day. Fish tissue concentrations sampled in the James River indicate that chemical concentrations of Kepone have fallen over time. More significantly, however, the most recent data available from Virginia DEQ indicates that samples of fish tissue concentrations still exceed the limit of 0.03 ppm. Figure 1 displays the decline in Kepone concentrations in white perch and striped bass from 1976 to 2002, sampled from various zones within the James River estuary. Though concentrations have decreased, white perch and bass tissues have continued to be sampled at concentrations higher than the level set by the Virginia Department of Health as protective of human health. Data from 2004 indicate that fish tissue samples in striped bass were still as high as 0.09, three times the DOH limit, and samples in white perch were as high as 0.07 (Virginia DEQ). Despite the overall decline, data indicate that the James River fish populations have had 28 years to prove that natural recovery is effectively cleaning up the river. In those 28 years, fish tissues are still coming back higher than Virginia's Department of Health deems protective of human consumption. After three decades, MNR has not successfully caused a decrease in chemical concentration below the levels acceptable for human health.

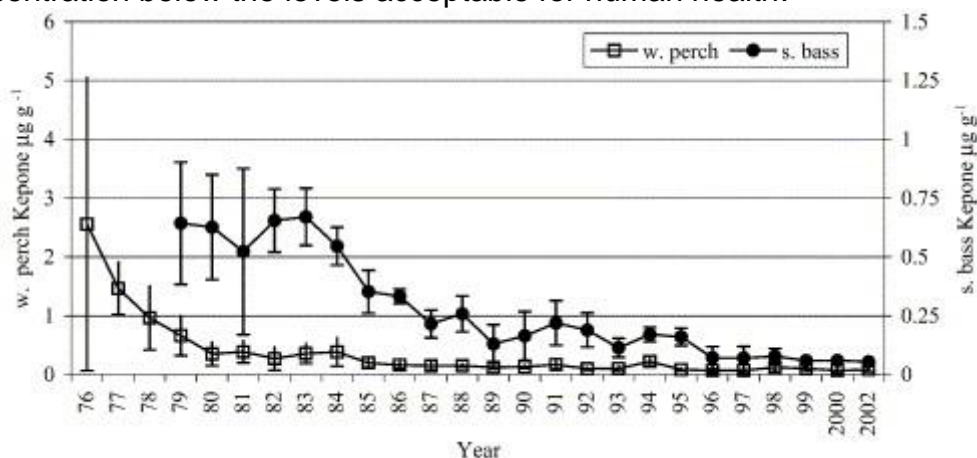


Figure 1. Average Kepone concentrations in white perch and striped bass from zones D–A (Hopewell to the mouth of the James River) (Luellen et. al 2006)

The possibility that the Housatonic River could result in the same prolonged contamination as the James should not be surprising given the extreme persistence in the environment of these compounds. The same processes that isolate contaminated sediments from aquatic organisms also serve to prevent or inhibit natural recovery mechanisms. Considering that PCBs have the potential to remain in sediment for over 100 years, it is almost a statistical certainty that a significant scouring event (such as a 100 year flood event) will occur during the timeframe required for MNR to run its course. These events redistribute the essentially un-degraded PCBs and make them readily accessible to aquatic organisms such as fish where they can enter and accumulate in the food chain. The long-term effectiveness of MNR is countered by many of the same natural processes that it wishes to exploit. In most cases MNR is not a desirable remedial option, particularly if the objective is to reduce fish tissue concentrations below levels that require consumption advisories. The Housatonic River community is not willing to settle on unsupported, unrealistic alternatives as a means of remediating their river. MNR should not be incorporated into the final remediation alternative if the objective is to do what is best for the river and the community.

Specific Comments

1. Section 2.1.1 Underlying rationale and principles, page 2-1: It is unacceptable that GE continues to profess that the fish consumption advisories will never be lifted. So long as fish from the Housatonic cannot be consumed, the cleanup is not meeting the first legal criteria of a cleanup: to protect human health and the environment. GE is failing in its responsibilities to clean up by refusing to restore the river to a quality that provides for safe consumption of fish. Any of the alternatives it provides, and certainly the one that is eventually selected, should be based in this principle legal criterion.
2. Section 2.1.1 Underlying rationale and principles, page 2-1: GE states that “remediation activities would disrupt these species’ abilities to return to and use these habitats...” This statement is simply not true. If the habitat is restored with native plants, woody debris, and clean soil, there is no reason that these animals would not inhabit the site once again. The quality of the restoration is directly linked to the number of species that do return and successfully breed, an indication that the area is in fact a habitat once more, and several studies suggest site characteristics that must be incorporated for species to return including: creating corridors, minimizing edges, removing disturbances, placement of fallen wood, planting native trees, shrubbery, and herbs, and providing nest boxes (Recher 2004¹, Majer et al 2001²). There is little research

¹ Majer, JD, Recher HF, Graham R, Watson A. 2001. The potential of revegetation programs to encourage invertebrates and insectivorous birds. Curtin University School of Environmental Biology Bulletin No. 20.

² Recher, HF. 2004. Eucalypt forest birds: the role of nesting and foraging resources in conservation and management. In Lunney D (ed) Conservation of Australia's forest fauna, 2nd edn. Royal Zoological Society of New South Wales, Mosman, 23-25.

on which site characteristics are most important for biodiversity and species return, however. It is critical that GE make meticulous notes of the natural setting in which they are working, prior to beginning work on any alternative, so that they can restore it as closely as possible to its original character.

3. Section 2.1.1 Underlying rationale and principles, last bullet, page 2-3: The Work Plan states: “Exposure to PCBs in sediment and floodplain soil should be reduced *if necessary* to ensure the protection of local populations and communities of animals and plants except where the remedial action to reduce exposure would cause significant harm to those local populations or communities” (italics added). The tone of this bullet implies that GE does not equate exposure to PCBs with harm. On the contrary, there is a large body of studies indicating that prolonged exposure to PCBs in humans and wildlife results directly in harm to those species. There is no question that it is necessary to reduce exposure to PCBs – that is the reason this cleanup is being conducted in the first place.
 4. Section 2.1.2 Description of Elements of ESA, page 2-3: Why is the selected depth of removal 2ft for Reach 5A sediments? The Work Plan does not give a reason for this removal depth and how they ascertained that a 2 foot removal will be protective of human health and the environment.
 5. Section 2.1.1 Description of Elements of ESA, page 2-4: Why does GE propose increasing the depth of Woods Pond? The Work Plan states that there will be an increase in water depth and therefore no cap will be placed on Woods Pond after removal.
 6. Section 2.1.1 Description of Elements of ESA, page 2-4: The report claims that current floodplain soils are already protective of human health because the IMPGs meet a cancer risk of 10^{-4} . This cancer risk level is too great and will not be protective of human health. GE must remediate the floodplain soils to achieve a standard that is more protective of human health. In addition, this IMPG only applies to the concentrations in the top foot of soil. What are the concentrations deeper than 1 foot? If mixing of these layers were to occur, it is likely that the cancer risk would be even higher.
 7. Section 2.1.1 Description of Elements of ESA, page 2-5: Monitored Natural Recovery is not an acceptable cleanup strategy. It is essentially the Do Nothing Alternative: it does not promote a cleaner river; it does not help lift the ban on fish consumption; and it does not protect human health. GE cannot use MNR as an ecologically friendly excuse simply because it leaves the ecosystem physically undisturbed; neither can they use it because it is cost-effective (i.e. Doing nothing is free.) MNR allows unsafe levels of chemicals to continually pervade the environment, and there has never been proof that the environment can heal itself from PCB contamination. This failure of natural recovery is the same reason that
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the Hudson River is being dredged – after 30 years, MNR failed as an alternative and EPA had to spend millions implementing another project.

8. Section 2.1.3 General Remedial Approach, page 2-6: If GE plans to dredge in the wet in Woods Pond, why is hydraulic dredging not an option? The Work Plan states that it would “likely” use a barge-mounted clamshell, but does not give a reason for excluding other alternatives. Furthermore, conventional clamshells should not be considered an option when environmental bucket dredges are available.
9. Section 2.1.3 General Remedial Approach, page 2-7: The Work Plan states that its restoration will consist of re-seeding and re-planting the areas impacted by soil and sediment removal with vegetation “typical of what was present in those areas before remediation.” Rather than completely destroy the natural vegetation and begin again, the shrubs should be held at another location and transplanted when the remediation enters the restoration phase, if the soils in a root ball are not contaminated with PCBs..
10. Section 2.2.1.1 Elements of Alternative (SED 9), page 2-9: There is no reason to use “conventional excavation equipment” when new technologies facilitate more effective, less risky dredging. The environmental bucket should be considered in this situation.
11. Section 2.2.1.1 Elements of Alternative (SED 9), page 2-9: The Work Plan states: “In Reach 5C, sediments would be removed to a depth of 2 feet in shallow areas and 1.5 feet in deeper areas.” What constitutes a shallow area and a deeper area? What concentrations are determining the removals? What are the MCLs or cleanup goals? GE has not provided any basis for the seemingly arbitrary depths in the soil planned for excavation.
12. Section 2.2.1.1 Elements of Alternative (SED 9), page 2-10: The Work Plan lays out its plan to remediate Woods Pond (Reach 6) but like Reach 5C, there are certain details that are omitted. Again, what is deep and what is shallow? Is 1 foot depth really going to remove the majority of the PCBs? How did GE derive these depths?
13. Section 2.2.1.1 Elements of Alternative (SED 9), page 2-11: It is completely unacceptable that SED 9 does not clean up the river to a point that the bans on fish consumption would be lifted. If the natural environment is still restricted in some way after the cleanup, the cleanup is not complete.
14. Section 2.2.1.2 General Remedial Approach page 2-13: The Work Plan states that periodic water column testing would occur but there is no other information provided on why, when, or how the testing would be implemented. GE must identify whether this testing will occur during excavation, after, on a schedule, etc. GE must also identify the course of action that will be taken if resuspension

concentrations exceed allowable limits. GE has polluted the river enough; it cannot afford to wreak more havoc in the stages of its cleanup.

15. Section 2.2.2.1 Elements of Alternative (FP8), page 2-14: The Work Plan states that all remaining floodplain soil with PCB concentrations at or above 50 mg/kg (under the FP 8 alternative) in the top foot of soil would be removed and replaced with backfill. This plan presumes that PCB levels of 40 mg/Kg are “safe,” presumably based on old thresholds and/or legislation. Current information indicates that PCB levels of 50 mg/Kg are a threat to human health. What happens if the concentrations below 1 foot are at or above 50 mg/kg? In the future, it is likely that construction activities, children playing, etc will dig below 1 foot underground. There are no details about how to proceed in this event, but it is certainly unacceptable to leave concentrations that high in the ground and expect the habitat to fully recover and be protective of humans.
16. Section 2.2.2.1 Elements of Alternative (FP8), page 2-16: The Work Plan estimates that FP8 will require the removal and backfilling of 18 acres of the PSA, where 61 of the 66 vernal pools are located. How is this any different than completing a clean sweep of the soil and backfilling the entire area? The damage will be at catastrophic levels under this “ecologically sensitive” alternative. In addition, the Work plan does not anticipate or call for any analysis of the effects of road construction on the habitat, other than fragmentation. Will flooding/runoff from the road construction destroy the vernal pools anyway? The entire hydrology of the area will be changed. GE must show modeling or other indicator of the effects of road and staging area construction on the hydrology and transport of contaminated soil in the PSA.
17. Section 3.1 General Application of Permit’s Evaluation Criteria to Individual Sediment and Floodplain Alternatives, page 3-2: The Work Plan states that the individual alternatives will be evaluated, taking into consideration “EPA’s and the Commonwealth’s comments...” What about public input? The community has a legal right to participate in the development of this cleanup and GE has a legal obligation to consider and incorporate these comments into the plans that they present.

Sources

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Housatonic Valley Association

150 Kent Road
P.O. Box 28
Cornwall Bridge, CT 06754
860-672-6678

1383 Pleasant Street
P.O. Box 251
South Lee, MA 01260
413-394-9796

19 Furnace Bank Road
P.O. Box 315
Wassaic, NY 12592
845-789-1381

www.hvatoday.org

Jim Murphy
EPA Community Involvement Coordinator
c/o Weston Solutions
10 Lyman Street
Pittsfield, MA 01201

10/22/09

Re: Comments regarding GE's 'Work Plan for Evaluation of Additional Remedial alternatives'

Dear Mr. Murphy,

As a representative of the Housatonic Valley Association, I would like to thank you for the opportunity to comment on GE's 'Work Plan for Evaluation of Additional Remedial alternatives' Report'. While we respect GE's stated concern that we want to 'minimize the harm that the sediment and floodplain soil removal would cause to the ecology of the Rest of River area', we feel that the Housatonic River has already received serious harm and is in need of remediation. We feel that the most effective long term remediation that will minimize any future harm to the ecology of the area is to remove the PCBs now.

While the Ecologically Sensitive Alternative (ESA) is more thorough in removing PCB contaminates than the previous alternatives, we feel that it still does not go far enough to complete a satisfactory remediation for the 'Rest of River'. We also respect the stated concern by GE that various remediation alternatives would 'adversely affect local habitat for animals and plant species of concern, such as vernal pool habitat that supports, wood frogs, Jefferson and Spotted Salamanders; forested riparian corridor, and the typical natural hydrologic process of a watershed'. However, we feel that the presence of the toxic PCBs in the environment present the greater concern for these areas as well as a much larger area. We feel that the remediation should include removal of PCBs to the maximum extent possible and when the area is deemed cleared and clean, a proper restoration program then replants and replaces what we had before the PCB contamination.

We also appreciate the concern expressed in determining the locations of access roads and staging areas that would create the least amount of environmental damage and hope that these concerns will be equally evaluated in the final remediation of the area. Since these areas are in the floodplain, appropriate measures should be taken to minimize 'staging area related contaminates' such as gasoline and oil, from directly entering the river. Also do to the present condition of global warming and the potential increased flood state level, any project related construction whose impact requires it to be outside the present 100 year floodplain should be elevated to be within the 500 year floodplain.

In Reach 5A, the propped ESA plan calls for the removal of two feet in selected areas, and a two foot cap would be placed on the excavated area. Other areas down to Woods Pond deemed as high risk areas would also remove the top two feet and other areas would be selected for 'Monitored Natural Recovery (MNR)'. We find this alternative unacceptable. We feel that where there are PCBs in unacceptable risk concentrations, they should be removed. Also areas that are proposed for capping, should not be capped should also have the sediment removed. Capping of PCBs still leaves PCB in our environment. There are no long term guarantees that this capping will not eventually release PCBs into the environment. This is the time that we are deciding on how thorough we should remove the PCBs, we should remove as much as we can and not leave it buried.

The SED 9 alternative would involve remediation of all of the riverbank in Reaches 5A and 5B and remove river sediment to a depth of 2 feet. Plus in Reach 5 backwaters, this alternative proposes that where water depth is greater than 4 feet a cap would be installed without removal, and where water depth is less than 4 feet, sediments will be removed to a depth of 1 foot and a 1 foot cap would be placed to grade. We have a problem with this arbitrary number of using depth as the criteria for when a cap would be allowable. We feel that the standard should be the ppm concentrations of PCB found in the area as the determining factor as to when to cap.

In SED 9, the Woods Pond (Reach 6) the current proposal states that sediment s would be removed in shallow areas to a depth of 3.5 and a 1 foot cap be put in place. Plus selected areas downstream in Reaches 7&8, identified hot spots or dams such as Rising Pond, would have 1.5 feet of sediment removed and a cap would be placed to grade. We agree with this need to remove PCB contaminated sediment below Woods Pond dam.

Therefore, since the SED9 alternative removes the greatest amount of PCB contamination, we would like to strongly urge EPA to accept the SED 9 alternative with some alterations as being the preferred alternative for the Rest of River remediation strategy. As stated, those alterations being the reduction in the amount of capping and the removal of additional PCB sediment. Also if legally possible, we hope that the approved remediation plan would be able to incorporate any alternative remediation technology that may be created and is proven to effectively remove and destroy PCBs on site.

Thank you again for this opportunity to offer our comments. We look forward to reviewing and commenting on the selected remediation alternative, and to the eventual scenario of a clean and restored Housatonic River.

Sincerely,

Dennis Regan
Berkshire Program Director



October 23, 2009

Jim Murphy
EPA Community Involvement Coordinator
c/o Weston Solutions
10 Lyman Street
Pittsfield, MA 01201

Dear Mr. Murphy:

Thank you for the opportunity to submit comments on the “Work Plan for Evaluation of Additional Remedial Alternatives for the GE-Pittsfield/Housatonic River Site, Rest of River.” As you know, the Massachusetts Audubon Society (“Mass Audubon”) strongly supports the remediation of the Housatonic River to reduce the human health and ecological risks associated with PCB contamination. We have been monitoring the development of a remedial alternative for the Housatonic River quite closely as we are both one of the largest affected landowners within the Primary Study Area and a statewide conservation organization whose mission is to protect the nature of Massachusetts for people and for wildlife. Mass Audubon is one of the organizations that spearheaded the original nomination of the Upper Housatonic as an Area of Critical Environmental Concern, and we have a long-standing presence in the Southern Berkshires. Our 262-acre sanctuary, Canoe Meadows Wildlife Sanctuary, located within Reach 5A of the Housatonic River, includes more than ½ mile of frontage along the River, as well as floodplains and vernal pool habitats that are contaminated with PCBs. We submitted comments on the Corrective Measures Study in May 2008 and additional comments on GE’s Response to EPA’s Interim Comments in May 2009.

We understand that the proposed Work Plan provides for the evaluation of several additional alternatives that were not addressed in the original 2008 Corrective Measures Study. These include an Ecologically Sensitive Alternative (ESA) proposed by GE as well as additional alternatives proposed by EPA. The Work Plan also provides a description of GE’s proposed approach to the evaluation of six restoration example areas along the River, including one area that is located at Canoe Meadows Wildlife Sanctuary. We have focused our comments in this letter on those items most applicable to the Work Plan, however most of the issues and concerns from our earlier comments remain to be addressed in the revised Corrective Measures Study (CMS).

Evaluation of Alternatives

The draft Work Plan describes a new alternative – the Ecologically Sensitive Alternative (ESA) – that will be analyzed in the revised CMS. Although GE lays out some broad principles for the choices that have been made for remediation in the ESA, it is difficult to understand why some areas were chosen for remediation, while others were avoided. Was the primary goal to reduce the “footprint” of the work along the river, to prioritize removal of highly contaminated areas, or to maximize avoidance of ecologically significant areas? For example, the ESA includes a large area of floodplain soil removal at the southern end of Mass Audubon’s Canoe Meadows Wildlife Sanctuary. It would be helpful to better understand why that area was chosen for remediation and what alternatives were considered in making these choices. We expect that as this alternative is evaluated in the CMS, GE will identify those areas selected for remediation and indicate why these areas were chosen for remediation over other areas along the river. In our May 2009 letter, we suggested that it might be helpful for GE to include maps in the revised CMS that show PCB concentrations overlaid on significant habitats and rare species concentrations. That would enable an analysis of where these “hot spots” coincide and where they are different and help inform the rationale for the choices that have been made about remediation locations.

In addition, while we agree with some of the language in the guiding principles used by GE in developing the ESA, we have significant concerns and requests for clarification on some of these principles as well. In particular, we agree that the Upper Housatonic provides a wide variety of habitats including habitats for rare species, and that maintaining the hydrologic and other natural processes that create and support these habitats is important. While concern for habitat destruction associated with remediation is warranted, there are also real adverse ecological impacts from the continued presence of PCBs. The selection of sites where the long-term benefit of remediation outweighs short-term impacts to habitat needs to be made according to explicit criteria. The degree to which restoration is possible is dependent on a variety of factors including good documentation of existing and desired future habitat characteristics for objective evaluation of restoration success. We do not believe that generalizations regarding likelihood of restoration failure are appropriate or helpful to decision-making at the initial stage of alternatives analysis. Although avoidance and minimization of impacts to important habitats are preferred, a detailed analysis of where the long term adverse ecological effects of PCBs may outweigh the short-term disturbance of habitat needs close examination in the Revised Corrective Measures Study.

Methodology for Evaluation & Evaluation of Example Areas

Mass Audubon looks forward to the opportunity to review the details regarding restoration that will be provided for the six “example areas” by GE in December 2009. As you know, this is information that EPA requested in General Comment 10 and Specific Comment 42 in September 2008. We believe that this site-specific information is critical to sound decision-making regarding alternatives and needs to be incorporated in a meaningful way into the revised CMS. We have reviewed GE’s proposed Work Plan for the evaluation of these six

example areas and do not believe that it is fully responsive to the list of topics to be covered in EPA's General Comment 10. The "example area analysis" should contain the following information: What kind of data will need be collected prior to remediation with regard to on-site species and ecological processes? How will this data be collected? How will restoration goals be set? How will landowners and stakeholders be involved in restoration planning and design – what is the sequence of steps that will occur? How will restoration occur? How will the restoration areas be monitored? What kind of data will be collected and what are the measures of success? What is the timeframe for evaluation of success in each kind of habitat? What steps may need to be taken post-restoration to ensure that restoration goals are met? How will invasive species be monitored and controlled? How will information regarding restoration success or failure be factored into subsequent years of the project? EPA may want to consider an independent science review panel that can play a role in assessing restoration success. Many of the habitat types along the Housatonic will be difficult to restore, but the potential for success will be improved if the above questions are answered with specific information and monitoring parameters before the work takes place.

With regard to post-construction restoration monitoring, we reiterate the concern from our previous comments that five years of post-construction monitoring may be insufficient. Rather than setting an arbitrary monitoring period across the entire remediation area, the restoration monitoring timeframe should be consistent with the maturation of the restored communities. Five years of monitoring is inadequate, for example, to assess the success or failure of a floodplain forest restoration, which could take decades to mature, but might be adequate for an herbaceous community. GE's monitoring protocol should reflect this reality.

Further, a key factor in designing and implementing a successful restoration project is the identification of restoration goals and objectives, based on existing ecological community conditions. Restoration goals and evaluation criteria should be specified in terms of appropriate structural and functional characteristics, using reference sites and/or existing conditions. Once these restoration goals are determined, GE should be required to monitor and evaluate field conditions (and adjust as necessary) until the restoration goals are achieved. Depending on the ecological communities affected, and additional plantings or other work needed to meet restoration goals, this may take far longer than five years to determine. We believe that it is critical that GE define the elements of this long-term ecological monitoring in the Revised CMS, as well as factor the cost of this long-term monitoring into its evaluation of alternatives.

As noted above, in considering remediation and restoration alternatives, it is important to set expectations regarding the time horizon for evaluating restoration success. Mass Audubon has prepared the attached GIS map, that shows changes in the Upper Housatonic over the past 100 years (see Figure 1). First, in the context of the persistence of PCBs in the environment without remediation, the timeframe for restoration of even forest communities is relatively short. The very slightly negative slope of the line in the Figure in GE's Interim Comments [Figure GC19-2a] for Reach 5A, for example, indicates that, if left in place, PCBs will remain at similar concentrations as at present for many times longer than 50 years (which is the limit of the

figure). Forest patches affected by remediation could regenerate several times over in this long period. Also, looking into the past, the Housatonic floodplain was mostly deforested for agricultural or industrial use before the middle of the 19th century¹. Extensive land clearing in the floodplain and throughout the watershed contributed to rapid river channel migration and the formation of many of the floodplain landforms, including meanders, oxbows, vernal pools, and terraces that we see today. Without human design or oversight, forests along the Housatonic have returned through the 20th century. While the remediation activities under consideration are different from historic activities in the area, the recovery of the area's diverse natural communities over the past 100 years indicates that the system is resilient to dramatic changes, and that given time and careful attention to habitat restoration, restoration might be successful provided that the underlying ecological processes are maintained.

Consistent with the need to maintain ecological processes, Mass Audubon has previously expressed concern about proposals that would armor the bank along the upper reaches of the River, as we believe that such armoring could result in long-term adverse impacts to riparian habitat along the River, and to the species that depend on this habitat, as well as disrupt natural ecological processes along the River. On page 2-3, the draft Work Plan states that "banks would be stabilized except where such stabilization activities would conflict with the application of the criteria..." The criteria include "maintaining a forested riparian corridor... to the maximum extent practicable" and "avoid or minimize the disturbance of remaining vertical riverbanks and the application of engineered stabilization techniques to riverbanks." We understand that GE is evaluating the suitability of various bank stabilization techniques and that this information will be provided in the in-depth evaluation of the six example areas required by EPA's Comment 42 to be provided in December 2009. However, we want to continue to be on record indicating that we are very concerned about any proposals to permanently armor or stabilize the banks in Reaches 5A and 5B.

We request that EPA provide sufficient time for GE to develop the revised CMS, so that all stakeholders are able to fully review the six-site restoration analysis this winter and provide meaningful input -- and so that this information can then be incorporated into the evaluation of alternatives in the CMS.

Remediation Phasing and Compliance with ARARs

We also reiterate our comment about the importance of phasing any remediation of the Housatonic River. As we indicated in our previous comments, this project should be designed as a phased remediation that would allow for adaptive management – with flexibility to adjacent remediation and restoration methods over time based on experience and evolving

¹ GIS layers associated with Harvard Forest 1830s Map Project: Hall, B., G. Motzkin, D. R. Foster, M. Syfert, and J. Burk. 2002. Three hundred years of forest and land-use change in Massachusetts, USA. *Journal of Biogeography* 129: 1319-1135.

techniques. Phasing is also important in relation to maintaining as much viable habitat and connectivity of habitats during remediation as possible. Defining the total amount of disturbance allowed at any one time, minimum revegetation standards before additional areas can be disturbed, and provisions for leaving some of each habitat type undisturbed at all times will all contribute to retention of the full range of native species and better restoration outcomes.

We continue to believe that EPA should consider permitting a demonstration phase of the remediation south of the confluence that would employ state of the art restoration techniques and provide time for evaluation of the results before proceeding with the remainder of the remediation. Put simply: we should be learning as we go, and building into the permit a requirement to evaluate and revisit the remediation and restoration techniques, even if this means that the remediation will extend over additional years. Since this will affect the timing and cost of the project, it is important that it be factored into the evaluation of alternatives in the CMS.

We are pleased that all of the alternatives will be re-evaluated through the lens of “ecological sensitivity” as we requested in our May 2009 comments. We also note that the analysis of applicable regulations (ARARs) will include the provisions relevant to recent designation of the Upper Housatonic as an Area of Critical Environmental Concern by the Commonwealth of Massachusetts. In designating this area, the Secretary of Environmental Affairs noted that the designation is intended “to promote [PCB] remediation while avoiding and minimizing adverse environmental impacts,” and to “encourage mitigation and restoration of critical resources...” Given that this designation was prompted in part by a desire to ensure that the remediation of the River is done in a manner consistent with its ecological and environmental significance, we would request that EPA give significant weight to these additional ARARs.

Finally, Mass Audubon concurs with the “Summary of Key Comments and Concerns” presented by the Massachusetts Department of Fish and Game in their May 2009 comments regarding the need for avoidance, minimization and mitigation of work within Priority Habitat areas as well as compliance with the performance standards of the Massachusetts Endangered Species Act (MESA). These issues will need to be addressed comprehensively within the Revised CMS.

Thank you for considering our comments. We look forward to our continuing involvement in evaluation and selection of remedial alternatives for the Housatonic River with EPA, GE and other stakeholders. Please let us know if you have any questions.

Very truly yours,



Laura Johnson
President

cc: Susan Svirskey, EPA
Jeff Porter, Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C. (for General Electric)
Kevin Mooney, Remediation Project Manager, General Electric
Mary Griffin, Commissioner, Massachusetts Department of Fish and Game
Laurie Burt, Commissioner, Department of Environmental Protection
Wayne F. MacCallum, Director, Massachusetts Division of Fisheries and Wildlife
Susan Steenstrup, DEP WERO
Congressman John Olver
Senator Benjamin B. Downing
Representative Christopher Speranzo
Representative Denis E. Guyer
Representative William Smitty Pignatelli
Berkshire Natural Resources Council
Housatonic Valley Association
Housatonic River Initiative
Berkshire Environmental Action Team
The Trustees of Reservations
Green Berkshires

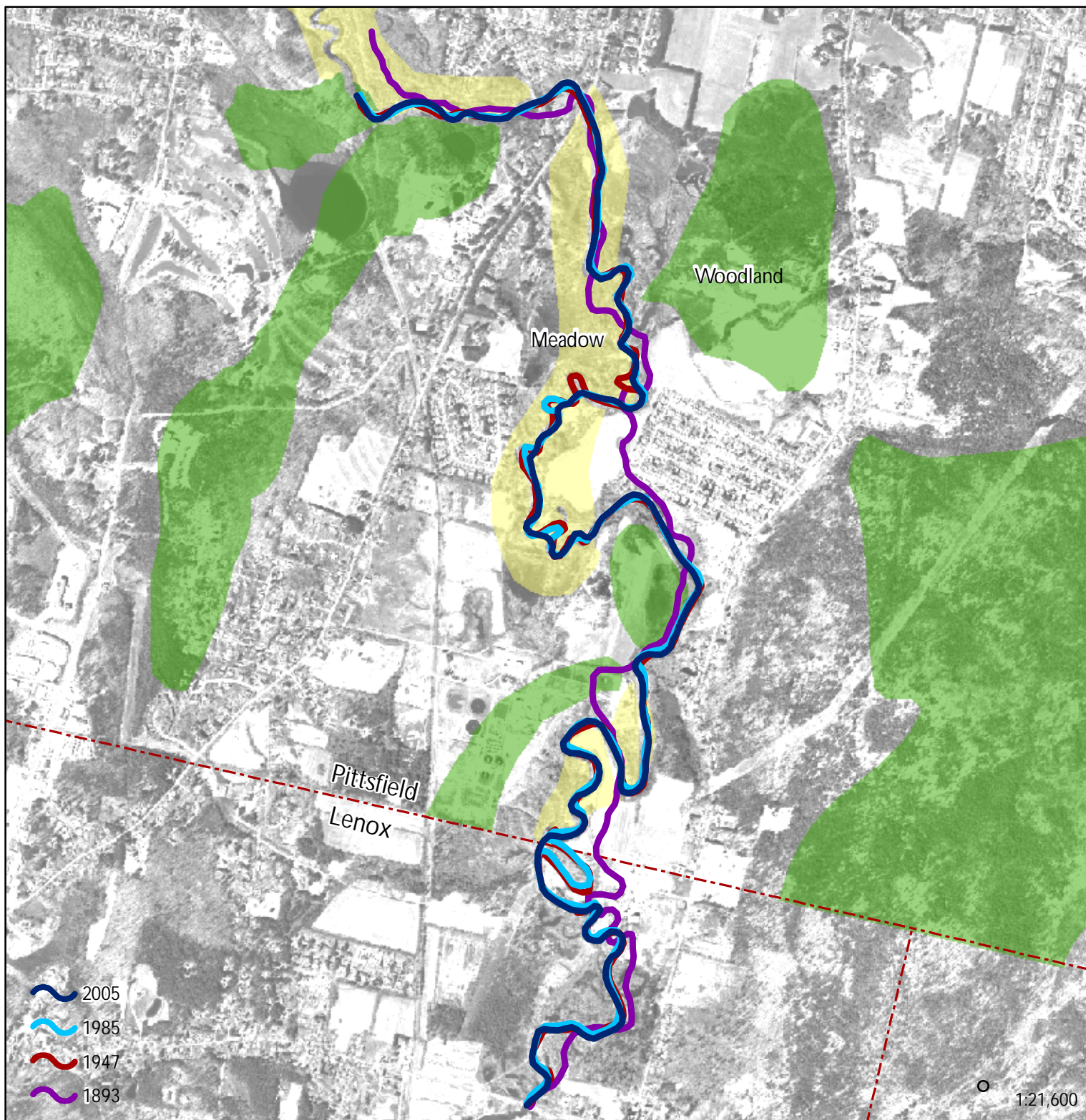
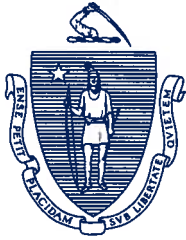


Figure 1. Housatonic River historic channel migration based on USGS quadrangles and modern orthophotos, 1893 to 2005, Pittsfield and Lenox, Massachusetts. 1893 and 1947 USGS quads from University of New Hampshire collection of historic USGS maps of New England and New York. 1988 USGS quads, 2005 half-meter orthophotos, and municipal boundaries from MassGIS. Historical quads were georeferenced by Mass Audubon to approximately 20 meter accuracy; stream centerlines heads-up digitized by Mass Audubon. Historic land cover from Harvard University 1830's Land Cover Project*; areas not shown as woodland were likely cleared; Lenox data missing.

* Hall, B., G. Motzkin, D. R. Foster, M. Syfert, and J. Burk. 2002. Three hundred years of forest and land-use change in Massachusetts, USA. *Journal of Biogeography* 129: 1319-1135.

STATE GOVERNMENT



The Commonwealth of Massachusetts

House of Representatives

State House, Boston 02133-1054

October 23, 2009

Jim Murphy
EPA Community Involvement Coordinator
c/o Western Solutions
10 Lyman Street
Pittsfield, MA 01201

Dear Mr. Murphy,

We, as members of the Berkshire Legislative Delegation, write to share our comments on the future clean up of the Housatonic River in Berkshire County.

It is vital that any decision made on the clean-up of the Housatonic River takes into account the concerns of those who live along the River and those who use the River frequently for recreation and other purposes. Therefore we request that the EPA consider an approach that takes into account the economic, environmental and recreational needs of the area. Together, we welcome a balanced and ecologically sensitive approach to address the issue of PCBs in the River. We recognize, however, the changing use and characteristics of the Housatonic as the River flows from urban Pittsfield into more rural countryside and it is for these reasons that we supported the recent ACEC designation for certain parts of the River.

Thank you for your time and attention to this matter. The clean-up of the Housatonic River is a very important issue because of the historical and environmental significance of the River to the Berkshires. We appreciate the opportunity to offer our comments and we look forward to working with the EPA on this important issue.

Sincerely,

A handwritten signature in blue ink, appearing to read "Smitty".

Wm. Smitty Pignatelli
State Representative
4th Berkshire District

A handwritten signature in blue ink, appearing to read "BBD".

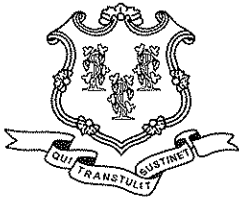
Benjamin B. Downing
State Senator
Berkshire, Hampshire and Franklin District



Denis E. Guyer
State Representative
2nd Berkshire District



Christopher N. Speranzo
State Representative
3rd Berkshire District



STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION

October 21, 2009



Mr. Jim Murphy
EPA Community Involvement Coordinator
c/o Weston Solutions
10 Lyman Street
Pittsfield, MA 01201

Dear Mr. Murphy:

Thank you for the opportunity to comment on the Work Plan for Evaluation of Additional Remedial Alternatives prepared by the General Electric Company (GE) and submitted on August 31, 2009. This document focused on the integration of additional remedial alternatives into the Corrective Measures Study (CMS) which will serve as the basis for selection of the appropriate remedy to address PCB contamination in the Housatonic River watershed in both Connecticut and Massachusetts.

We welcome the inclusion of additional alternative remediation scenarios within the CMS since a robust evaluation of potential approaches will likely yield a better environmental return once the remediation measures are selected and implemented. We do, however, have concern with the designation of one of the new additional approaches as the "Ecologically Sensitive Alternative". It is our contention, and we expect that the United State Environmental Protection Agency, GE and the Commonwealth of Massachusetts will agree, that all remediation activities must be undertaken in a manner which is sensitive to the ecology of the watershed. By extension, this label implies that other alternatives would not be implemented in a manner to reduce, to the maximum extent practicable, the impact of remediation activities on the environment or to restore the affected areas after remediation. We believe that all alternatives can and should be implemented in an environmentally sensitive manner and that such a label should not prejudice the selection of a suitable remedial measure.

Additionally, we offer the following comments:

- 1 Section 2.1 describes an approach which is solely focused on near-field impacts to biota within discrete areas in Massachusetts. There is no discussion or evaluation of affect of implementation of these recommendations on the environment and biota within Connecticut. Concentrations of PCBs in the environmental and ecological populations within Connecticut are affected by the presence and transport of PCBs from Massachusetts to Connecticut. Any remedial approach put forward in the CMS must include an evaluation of the potential affects to PCB

concentration in Connecticut, considering environmental media such as soil, sediment and groundwater and ecological populations including but not limited to fish, benthic invertebrates, waterfowl, endangered species, and piscivorous mammals and birds.

- 2 The discussion of the scientific and technical underpinnings presented in support of the additional remedial approach contained in section 2.1 continues to be insufficient and general. In the CMS, GE should provide a detailed discussion of findings from the scientific papers that they reference. In addition, they should provide copies of the references contained in section 2.1.1 of this Work Plan to facilitate review of proposals to be evaluated within the CMS.
- 3 The Work Plan does not address the issue of impacts to threatened and endangered species within Connecticut. This should include an explicit evaluation of impacts to such species in Connecticut, both from any active or passive remediation proposed within the watershed.
- 4 This Work Plan does not take into consideration that the Housatonic River in Connecticut is listed as impaired pursuant to Section 303(d) of the federal Clean Water Act and does not discuss the effect of any of the current proposals on the resolution of this impairment and eventual restoration of water quality and all designated uses of the waterbody within Connecticut. All proposed remedial activities must be evaluated for the ability to restore water quality and designated uses for the receiving water and removal of the waterbody from the impaired waters list for Connecticut.
- 5 Reliance on institutional controls such as fish consumption advisories as a permanent remedy to address PCB contamination of fisheries resources within Connecticut is not acceptable.
- 6 Any proposals for remediation activities within the Housatonic, including the additional measures addressed in this work plan, must explicitly evaluate the potential for such activities to spread populations of zebra mussels, recently found in Massachusetts, to other areas including Connecticut. All potential remedial approaches must address measures to prevent the spread of this invasive species as well as any other invasive species.
- 7 There are several places in the Work Plan where GE indicates that it will take into account comments provided by EPA and the Commonwealth of Massachusetts. GE must also consider comments provided by the State of Connecticut and any other party submitting comments.

- 8 Within the Work Plan, there is a discussion of cap design and placement. Any proposal to use a cap to manage PCB contamination that is proposed to be left within the environment must include a robust monitoring and maintenance component for the duration of the use of the cap.
- 9 The Work Plan references the use of monitored natural recovery (MNR) as a remediation alternative. Evaluation of this alternative must explicitly include a demonstration that the contamination within the environment is amendable to MNR, and that such processes are demonstrated within the Housatonic River based on a robust, on-going monitoring program and a timeline for achieving environmental goals using MNR. Provisions must be made for active remediation if MNR does not occur within the river or if the projected timeline to achieve water quality and environmental goals and uses for the watershed is excessive.

Thank you again for the opportunity to comment on this Work Plan. We look forward to continuing to work cooperatively with the United States Environmental Protection Agency, the Commonwealth of Massachusetts, trustee agencies and GE to achieve the cleanup and restoration of the Housatonic River Watershed.

Sincerely,



Betsy Wingfield
Bureau Chief
Water Protection and Land Reuse
Connecticut Department of Environmental Protection



COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF ENERGY & ENVIRONMENTAL AFFAIRS
DEPARTMENT OF ENVIRONMENTAL PROTECTION
ONE WINTER STREET, BOSTON, MA 02108 617-292-5500

DEVAL L. PATRICK
Governor

TIMOTHY P. MURRAY
Lieutenant Governor

IAN A. BOWLES
Secretary

LAURIE BURT
Commissioner

Ms. Susan Svirsky
Rest of River Project Manager
United States Environmental Protection Agency
c/o Weston Solutions
10 Lyman Street
Pittsfield, MA 01201

Re: Site No. GECD850; Housatonic River Rest of River; Comments on Work Plan for
Evaluation of Additional Remedial Alternatives

Dear Ms. Svirsky,

The Massachusetts Department of Environmental Protection (MassDEP) has reviewed the August 2009 document titled *Housatonic River – Rest of River Work Plan for Evaluation of Additional Remedial Alternatives*, prepared by ARCADIS and Anchor QEA on behalf of the General Electric Company (GE) and offers for EPA's consideration the following comments:

1. MassDEP reiterates its support of the development and full evaluation of an Ecologically Sensitive Alternative (ESA). The Commonwealth, as well as members of the public, has expressed concern over the impacts of remediation that would result from many of the other sediment and floodplain alternatives. MassDEP is supportive of the concept of an alternative that fully considers the impacts of remedial work and weighs these impacts against the benefits of remedial work, taking into account impacts to both human health and the environment.
2. MassDEP reiterates comments provided in its letter dated May 14, 2009 *Response to EPA's Interim Comments on the CMS Report* as they relate to the evaluation of the two alternatives described in the work plan, as well as the development of the revised Corrective Measures Study (CMS).
3. In response to a request made by EPA, GE has agreed to complete an in-depth evaluation of six example areas and submit this as a Supplement to the Interim Response prior to completion of the revised CMS report. This supplement will address General Comments 10 and 16 and Specific Comment 42 in EPA's September 9, 2008 comments on the CMS report. It is critical that GE's evaluation of the six example areas described in the work plan be

developed and submitted as expeditiously as possible, but no later than December 31, 2009. GE states that as part of its evaluation of the six example areas it will include a description of restoration methods as well as an evaluation of those methods. The evaluation of each example area will also include an assessment of the likely post-restoration conditions and functions of those restored habitats, both in the short-term and the long-term. The analysis of restoration in these example areas is critical to determining the remedy for the Rest of River, and GE must provide detail on the restoration methods, the impacts and benefits to resources, and the decision-making process and criteria by which GE determines whether work should or should not be performed in a specific area.

4. GE states in the work plan that it will reevaluate the bank stabilization techniques described for SED 3 through SED 8 in the CMS report. This reevaluation will include an assessment of the riverbank areas subject to remediation, the fluvial geomorphological considerations in those areas, and the potential stabilization techniques applicable to such areas. Also, as suggested by EPA and MassDEP, GE will consider a range of techniques including traditional hardening and numerous bioengineering techniques. In its reevaluation, it is important that GE utilize up-to-date bioengineering references as well as consider combinations of "hard" versus "soft" approaches. For instance, in certain cases a combination of hard armoring of the toe of bank with applications of bioengineering techniques on the side slopes may be a viable solution where it's determined that soft bioengineering techniques alone are not feasible due to stability issues in certain reaches.
5. GE states in the work plan that the replacement of vernal pools, riverbanks, groundwater-supported wetlands, and mature forests in the Primary Study Area that would be severely impacted by most of the sediment and soil removal alternatives evaluated in the CMS is not practicable. This claim that the replacement of such resources is not practicable needs to be more thoroughly evaluated in GE's analysis of the six sample areas. The details of any such claim must be scientifically supported by GE in the Supplement to the Interim Response.
6. MassDEP agrees with the range of combinations of alternatives to be evaluated in the revised CMS. In its analysis of these alternatives, measures of evaluation should include both impacts to current resources as well as the benefits resulting from the removal of PCBs. Balancing factors should be fully analyzed and disclosed, and GE should describe in detail the criteria and decision-making process by which it determines whether work should or should not be performed in a specific area.
7. The revised CMS should provide sufficient detail on restorative techniques as well as post-monitoring and evaluation of the success of restoration once the work is completed. This will in part be based on the findings of the Supplement to the Interim Response.
8. Although not specific to this document, EPA has stated publically that it supports provisions for an "adaptive management" approach during selection of the final remedy in order to recognize the benefits of potential innovative technologies for remediation in the future. MassDEP is supportive of this approach and for allowing for changes/improvements in the remedy should these technologies become feasible.

9. EPA has stated that it is not certain if it will recognize the newly-designated Area of Critical Environmental Concern (ACEC) in its analysis of Applicable or Relevant and Appropriate Requirements (ARARs) and whether or not it will consider the ACEC to be an ARAR. It is MassDEP's position that EPA must recognize the newly-designated ACEC in its analysis of ARARs and that additional ARARs must be included as a result of such designation.

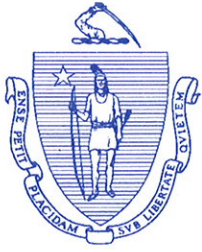
The Commonwealth is a key stakeholder in the cleanup process for the Rest of River and MassDEP looks forward to working with EPA, GE and all other stakeholders in evaluating the Supplement to the Interim Response and the revised CMS, and in deciding upon the ultimate selection of the remedy.

Sincerely,

A handwritten signature in black ink, appearing to read 'Laurie Burt', with a long horizontal line extending to the right.

Laurie Burt
Commissioner
Massachusetts Department of Environmental Protection

cc: GE – Rod McLaren, Michael Carroll, Dick Gates
EPA – Richard Cavagnero, Tim Conway, Dean Tagliaferro, John Kilborn, Holly Inglis
EEA – Ian Bowles, Ken Kimmell
MassDEP –Lucy Edmondson, Janine Commerford, Michael Gorski, Eva Tor, Jeff Mickelson,
Paul Locke
MassF&G – Mary Griffin, Rich Lehan, Mark Tisa



The Commonwealth of Massachusetts
Executive Office of Energy and Environmental Affairs
100 Cambridge Street, Suite 900
Boston, MA 02114

DEVAL L. PATRICK
GOVERNOR

TIMOTHY P. MURRAY
LIEUTENANT GOVERNOR

IAN A. BOWLES
SECRETARY

Tel: (617) 626-1000
Fax: (617) 626-1181
<http://www.mass.gov/envir>

October 23, 2009

Ms. Susan Svirsky
Rest of River Project Manager
United States Environmental Protection Agency
c/o Weston Solutions
10 Lyman Street, Pittsfield, MA 01201

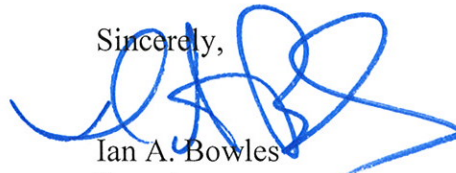
Re: Comments on General Electric Work Plan for the Rest of River Remedy

Dear Ms. Svirsky:

Enclosed please find comments from two of our agencies, the Department of Fish and Game and the Department of Environmental Protection, concerning General Electric's draft work plan for the Housatonic River. As you know from our prior correspondence, selecting the appropriate remedy for this stretch of the river is extremely important, particularly in light of my decision earlier this year to designate the area in question as an Area of Critical Environmental Concern (ACEC). The remedy must maintain and enhance sensitive ecological resources at the same time that it undoes decades of environmental contamination. While we must ensure that additional damage does not get done in the name of environmental cleanup, so must we insist that maximum cleanup of contaminants be achieved, even if doing so with sensitivity to surviving ecological resources makes that cleanup more challenging. We will get only one chance to clean up the Housatonic right, and we must not squander it.

To this end, getting the work plan right from the outset is a vital step, as the work plan establishes the scope for the further study and analysis needed to make informed decisions on the best remedial option. The enclosed comments articulate both general principles that should guide this matter, as well as a detailed itemization of information and data that we expect General Electric to gather and present. I trust that these comments will be useful, and I thank you in advance for giving them a high degree of attention.

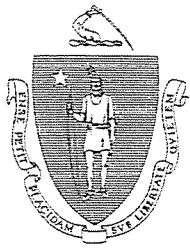
Sincerely,



Ian A. Bowles
Secretary

cc: GE – Rod McLaren, Michael Carroll, Dick Gates
EPA – Ira Leighton, Richard Cavagnero, Tim Conway, Dean Tagliaferro, John Kilborn, Holly Inglis
EEA – Ken Kimmell
MassDEP – Laurie Burt
MassF&G – Mary Griffin





Deval L. Patrick
Governor
Timothy P. Murray
Lieutenant Governor

Commonwealth of Massachusetts

Department of Fish and Game

251 Causeway Street, Suite 400

Boston, Massachusetts 02114

(617) 626-1500

fax (617) 626-1505



Ian A. Bowles
Secretary
Mary B. Griffin
Commissioner

October 22, 2009

Ms. Susan Svirskey
Rest of River Project Manager
United States Environmental Protection Agency
c/o Weston Solutions
10 Lyman Street
Pittsfield, MA 01201

Re: DFG/DFW Comments on GE's Work Plan for the Rest of River Remedv

Dear Ms. Svirskey:

The Department of Fish and Game ("Department" or "DFG") and its Division of Fisheries and Wildlife ("Division" or "DFW") submit the following comments on GE's August 31, 2009 Work Plan for the Rest of River ("ROR") phase of the remediation of the Housatonic River Site.

I. Introduction

In a letter dated May 8, 2009 to EPA, DFG and DFW provided extensive public comments on GE's March 9, 2009 Response to EPA's Interim Comments on GE's March, 2008 Corrective Measures Study ("CMS") for the ROR. Our comments included a detailed critique by DFW's Natural Heritage and Endangered Species Program ("NHESP") of GE's preliminary assessment of Massachusetts Endangered Species Act ("MESA") regulatory compliance issues under the various remedial alternatives, contained in Appendix B of GE's March 9, 2009 Response. Given how critical this issue is to the outcome of the ROR remedy as well as its relevance to the Work Plan for the revised CMS, we have summarized our previous key comments and concerns below.

Summary of Key MESA Comments and Concerns Regarding Appendix B

- GE's analysis of whether there is a insignificant impact to the local population is based on an overly narrow definition of the "local population" in many cases. This potentially leads to an overstatement of the number of cases where this MESA performance standard could not be met.

- The MESA Assessment assumes that a given state-listed species is equally distributed throughout the “Priority Habitat of Subject Species.” As the actual distribution of a species may be clumped and habitat quality can vary considerably across the landscape, this assumption leads to potentially inaccurate conclusions regarding whether there is an insignificant impact and the feasibility of minimizing impacts as remediation is implemented.
- The MESA Assessment assumes that impacts of >20% of the acreage of Priority Habitat of Subject Species would necessarily result in a significant impact to affected local populations. This assumption is likely to be flawed for the reasons listed above, and therefore likely overstates the number of species for which the insignificant impact threshold could not be met.
- The analysis of potential to provide net-benefit mitigation does not consider a wide variety of options for habitat management, conservation planning/research, and habitat protection both within and outside of the Primary Study Area (“PSA”). As noted above, “off-site” mitigation is an available option under the MESA regulations, and many of the species to be affected are known to occur within the Commonwealth but outside of the PSA. Therefore, net-benefit mitigation may be achievable more broadly than suggested in GE’s MESA Assessment. Furthermore, many species were not evaluated for the potential to achieve “Net Benefit” because it was assumed that the insignificant impact standard could not be met.
- The insignificant impact on local population and the net-benefit performance standards in 321 CMR 10.23(2)(b) and (c) respectively are interrelated, in that certain forms of mitigation are designed to enhance the local population, thereby lessening the overall impact of a project. For this reason, DFW typically requires an applicant to evaluate whether a net benefit can be provided, even in cases where there is a preliminary assessment that the activity will impact a significant portion of the local population. This approach is appropriate because after-the-fact habitat management and habitat restoration could off-set remediation impacts in certain cases, which should be considered in evaluating the level of impact on the local population resulting from a particular remedial alternative in site-specific locations.
- As noted above, in order to authorize a take, 321 CMR 10.23(2)(b) requires that there be an “insignificant impact” to the *local* population of the affected state-listed species. In comparison, 321 CMR 10.23(2)(c) requires that a “net-benefit” be provided to the affected state-listed species *as a whole* (i.e., beyond the geographic location of the local population of that species). Even in cases where there is no dispute that there will be an impact on a significant portion of the local population, the Division would still request EPA to require GE to determine whether a Net Benefit can be provided to the conservation of the affected state-listed species, as a means of ensuring compliance with the MESA performance standards to the maximum extent possible.

Because a MESA assessment of this magnitude is complex from both a technical and regulatory perspective, we emphasized that it requires information about the distribution of state-listed species both within and outside of the PSA, as well direct input from the Division's NHESP. For these reasons, we requested that GE consult directly with NHESP¹ as GE refines its MESA assessment in the upcoming revised CMS, and specifically, to undertake, in consultation with NHESP, a more thorough analysis of application of the "insignificant impact on local population" and "long term net-benefit" regulatory standards to the range of remedial alternatives, including GE's proposed Ecologically Sensitive Alternative, and assess the related mitigation options.

Other key comments in our May 8, 2009 letter were the importance of GE providing a complete and timely response to Specific Comment ("SC") 42, which, as further specified by EPA in its October 30, 2008 letter, directs GE to conduct comprehensive analyses of six (6) different features or habitat areas within the PSA with unique ecological characteristics. We also assessed GE's response to General Comment 10, which directed GE to provide a detailed description of the restoration process and the methods that may be used to restore habitats affected by the remediation and other construction activities. Our comments affirmed that we share many of GE's concerns about the long-term impacts of the remedial alternatives on the ROR ecosystem as well as the key constraints associated with fully restoring the range of riverine environments and habitats within ROR. However, we concluded that GE's response did not adequately support and document the basis for its negative conclusions about likelihood of avoiding, minimizing and mitigating impacts, particularly to state-listed species, or of achieving full restoration when impacts cannot be avoided. We also made the point that absent a response to SC 42, GE's analyses and related conclusions regarding the likelihood of success of restoration were too conceptual and conclusory in nature.

As the next important step in the process, GE submitted its Work Plan for the revised CMS on August 31, 2009. The primary focus of the Work Plan is to describe GE's approach to evaluating its proposed Ecologically Sensitive Alternative as well as two additional remedial alternatives requested by EPA. The Work Plan also describes GE's upcoming response to SC 42, which calls for an in-depth evaluation of the six representative ecological features and habitat areas. Set forth below are specific comments of DFG and DFW on GE's Work Plan.

II. Specific Comments on GE's Work Plan

A. GE's Description and Evaluation of the ESA

To recap, in December, 2008 GE first presented to EPA and the Commonwealth a conceptual framework for a new approach for balancing on how to reduce PCBs in the ROR to meet the ecological IMPGs while still protecting and maintaining sensitive fisheries and wildlife species, habitats and resources (such as MESA state-listed species and vernal pools). GE termed this approach their "Ecologically Sensitive Alternative" or "ESA". The Commonwealth supported GE's request to EPA to include their ESA in the revised CMS. Our view is that allowing GE an opportunity to fully develop and evaluate

¹ GE's consultation with NHESP should be coordinated through Jon Regosin, Ph.D., Regulatory Review Manager.

their ESA on an equal footing with the other alternatives in the revised CMS will provide EPA, the Commonwealth and the public with a more complete picture of the remedial costs, benefits and trade-offs that should inform EPA's ultimate selection of the remedy for the Rest of River. EPA, in turn, authorized GE's inclusion of the ESA in the revised CMS in January, 2009. EPA, with the Commonwealth's support, subsequently directed GE in July, 2009 to evaluate a new sediment alternative (designated SED 9) and a new floodplain alternative (designated FP 8) in the revised CMS. These two additional remedial alternatives are described in Section 2.2 of the Work Plan. DFG's and DFW's more specific comments below focus on the Work Plan's description of the ESA.

1. Rationale for Selecting the ESA Removal Locations (pp. 2-2 through 2-5)

Section 2.1 of the Work Plan describes GE's proposed ESA, addressing the rationale and conceptual principles underlying this alternative, the main elements of the ESA (including a revised approach to Woods Pond), and the general remedial approach to implementing the ESA. The Work Plan states that the ESA would involve the removal of approximately 265,000 cubic yards ("cy") of sediment, bank soil, and floodplain soil from approximately 20 acres of river bottom in the upper portion of the PSA, 42 acres of Woods Pond, 1.5 linear miles of stabilized riverbank, and 14 acres of floodplain. Figures 2-1a, 2-1b, and 2-1c depict the areas where sediments, bank soils, and floodplain soils would be removed, as well as the locations of access roads and staging areas to support the implementation of the ESA. Appendix A, in turn, states in general terms the criteria applied in each EPA-defined "Exposure Area" or "EA" or group of EAs in the PSA to select such locations, as shown on Figures A-1a and A-1b in the Work Plan.

The Work Plan contains a reasonably detailed explanation of the rationale for selecting the ESA removal locations in terms of addressing human health IMPGs. See Section 2.1.2, pp.2-2 through 2-5. For example, the Work Plan explains that removal would be required in 24 EAs that do not meet the non-cancer RME IMPGs and in 5 Heavily Used Subareas that do not meet those IMPGs or the IMPGs associated with the 10 to the minus 4 cancer risk. However, the Work Plan is still not specific about the rationale for GE's determination of those areas where it is more appropriate to leave sediments, bank or floodplain soils intact rather than meet the applicable ecological IMPG. As noted above, Figures 2-1a – 2-1c. depict the soil removal areas as well as the locations of access roads and staging areas, and Appendix A and the related Figures A-1a and A-1b appears to apply the general criteria for selecting removal locations to EAs or groups of EAs. However, neither the narrative in Section 2.1 of the Work Plan nor the analysis in Appendix A clearly explain a critical aspect of the ESA - why other locations were deemed inappropriate for remediation due to their ecological impacts. For example, the Work Plan on p.2-3 states generally that eroding riverbanks adjacent to sediment removal areas in Reach 5A would be stabilized "except where such stabilization areas would conflict with the application of [the conceptual ESA criteria listed in the Work Plan]". The Work Plan does not, however, contain a specific description of how the application of the ESA criteria resulted in such a determination.

In order to make the best case for the ESA in the revised CMS, it is incumbent on GE to show concretely how the ESA differs from and is preferable to the other alternatives, and in doing so, make explicit the ecological and comparative risk considerations underlying the ESA remedial outcomes. If EPA does not intend to require

GE to further submit a further revised Work Plan in response to public comments, DFG and DFW request that EPA condition any approval of the Work Plan to require GE to provide the full explication of the ESA remedial outcomes described above in the revised CMS.

2. The Woods Pond Component of the ESA (p.2-4)

The ESA in the Work Plan proposes a substantive remedial approach to Woods Pond, which DFG and DFW view as a positive change in direction and an enhancement to the ESA itself. To put this development in context, the alternative selected by GE in the original March, 2008 CMS calls for the thin layer capping of Woods Pond. In contrast, the Work Plan calls for the removal of top 2.5 ft in those shallow portions of Pond that contain greater than 13ppm in top 6". This would result in the removal of 169,000 cy from 42 acres of the Pond. The above remedial approach would remove a significant portion of the total PCB mass in Woods Pond, resulting in some (but yet to be precisely determined) secondary restorative benefit to the fisheries habitat in the Pond. GE's willingness to propose a substantive remedial approach to Woods Pond is evidence of its effort to be responsive to the concern of the Commonwealth (and other Berkshire County stakeholders) that this important Housatonic River recreational and fishery resource not be written off as an outcome of the ROR remedy.

We are not, however, in a position at this stage in remedy selection process to offer our definitive and unconditional support for the Woods Pond component of the ESA. While we appreciate GE's efforts to respond to our concerns about the remedial outcome for Woods Pond, the next step is to further engage GE on this question as it moves ahead in shaping out the ESA in the revised CMS. The focus would be to get a more specific, concrete understanding of how the scope of proposed remediation of Woods Pond fits into the remedial and resource outcomes in the *overall* ESA, including in the following areas: understanding the contribution of PCB loadings from erodible riverbanks in Reach 5 to Woods Pond, the proposed total PCB mass removal in Woods Pond to that in Reach 5; and evaluating the extent of any secondary fisheries habitat restoration in Woods Pond as compared to the nature and scope of natural resource mitigation/restoration in Reach 5. It is also our expectation that GE's upcoming response to Specific Comment 42 will provide concrete guidance on the scope and nature of potential environmental mitigation/restoration outcomes resulting from the implementation of the ESA.

In short, GE's inclusion of a substantive remedial approach to Woods Pond as part of their ESA in the Work Plan is a welcome development and we look forward to obtaining more specific feedback from GE on this component and the overall ESA as GE develops the revised CMS.

B. Description of the Upcoming SC 42 6 Areas Evaluation (pp.4-1 through 4-3)

As noted in the Introduction, our prior public comments have stressed the importance of GE providing a thorough response to SC 42, which requires GE to conduct comprehensive analyses of six (6) representative areas in the PSA. We appreciate that GE has included a description in Section 4 of the Work Plan that sets forth its proposed methodology for completing the upcoming analyses. GE also states therein that it has

initiated these in-depth evaluations and anticipates submitting a Supplement to its Interim Response to EPA presenting the results of the evaluations by December 31, 2009. This schedule is acceptable to DFG and DFW, provided GE uses the extra time to conduct the comprehensive analyses expected by EPA and the Commonwealth.

GE's identified methodology for the six in-depth evaluations has five components: (1) an introduction; (2) an overview of the six areas and a detailed description of their natural communities and functions; (3) a description of the impacts of the sediment and floodplain alternatives on the habitats, and options for avoiding/minimizing impacts to the habitats; (4) a description of potential restoration methods; and (5) an assessment of likely post-restoration conditions, in the short and long term. GE's description is generally consistent with detailed direction provided by EPA in its October 30, 2008 letter, though certain aspects of it raise questions as to whether GE is on the same page as EPA and the Commonwealth in terms of the scope and level of specificity required for the evaluations. For example, EPA's letter is clear that GE's evaluation must include "the process by which performance standards shall be established with stakeholder input to assess the success of the restoration, including the need for specific measures to evaluate the effectiveness and control of invasive species, and the success of bank stabilization (including consideration of the ecological functions and services)." While GE's methodology includes an assessment of likely post-restoration conditions, it makes no mention of establishing upfront performance standards for measuring the success of the restoration, or seeking stakeholder input on that process.

GE's description (p.4-2) also states that its in-depth evaluations will not include the kind of design plans that would be part of an actual restoration program. DFG and DFW acknowledge that EPA's October 30, 2008 direction to GE states that GE's responses are not to be viewed as selected response actions or remediation or restoration plans for such areas, and that GE is to collect no new data. However, given EPA's appropriate emphasis on the need for comprehensive, detailed, area-specific evaluations, EPA should direct GE to prepare at least conceptual plans that concretely illustrate affected habitats, impacts thereto, and restoration approaches. Such conceptual plans will serve as a helpful supplement to the detailed narrative descriptions. Moreover, even though no additional field data will be collected, EPA should also direct GE to expressly consider NHESP's detailed critique of GE's MESA Assessment in Appendix B when conducting its in-depth evaluations.

In Section 3.1 (p.3-3), GE references its upcoming six areas evaluation, which it properly notes will be "in-depth," but contrasts it to the evaluation that will be in the revised CMS, which GE indicates will be "a more general version of this process," and "necessarily be conceptual." See also p.2-8. While we do not expect GE to do the same level of in-depth analysis for the entire ROR, the alternative analyses must be more comprehensive and specific than contained in the March, 2008 CMS. This is particularly the case for the ARAR compliance and restoration components of the alternatives analyses, as emphasized in our prior comment letters. Per our comments above on the rationale for selecting ESA removal locations, it is also imperative that GE to provide more than a general, conceptual description in the revised CMS of how the ESA works and the basis for its remedial outcomes.

C. Other Comments

1. The Importance of Taking Into Account NHESP's Comments on Appendix B

Although the Work Plan states in more than one place that GE will take into account the Commonwealth's comments on GE's Response to Comments document (see pp.3-2 and 3-3), DFG and DFW request that EPA expressly direct GE take into account NHESP's detailed critique of GE's MESA Assessment in Appendix B of their Response to Comments, particularly in the following two areas:

- determining the scope of impact of all the alternatives on state-listed species and habitats, and
- analyzing each alternative's compliance with MESA as an ARAR, including how the MESA regulatory standards of "insignificant impact on the local population of the affected state-listed species" and "long-term net benefit for the conservation of the state-listed species" will be achieved.

2. GE's Qualifications on its Obligation to Restore Impacts

DFG and DFW note that in footnote 5 on p.2-15, GE states that "[it] believes, as a legal matter, that certain substantive restoration requirements relating to restoration of affected resources would exceed EPA's remedial authority, given the settlement of the natural resource damage claim in this case. For these reasons, the discussion of restoration methods for this [SED 9] or any other remedial alternatives should not be regarded as a commitment to implement those methods." For the record, the position of DFG and DFW is that GE has an independent legal obligation to fully restore affected resources in compliance with federal and state ARARs, including MESA. Furthermore, GE should set forth its proposed restoration approaches for each alternative in the revised CMS without qualification so that the Commonwealth and other stakeholders can get a true picture of how the alternatives compare on this critical issue.

3. The Importance of Considering the ACEC Designation in GE's ARAR Analysis

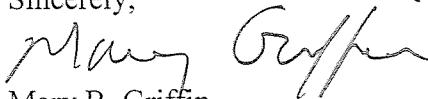
DFG and DFW strongly supported the designation of the Upper Housatonic River Area of Critical Environmental Concern ("ACEC") in March 2009. This designation affirms the unique ecological character of the ROR, which must be fully considered when selecting the remedy. As stated in the Secretary of EOEEA's designation document, "this ACEC designation is intended to facilitate the [ROR] cleanup by encouraging scientifically based decision making and alternatives analysis 1) to promote remediation while avoiding and minimizing adverse environmental impacts, and 2) to encourage mitigation and restoration of critical resources to meet the purpose of designation which is to preserve, restore, or enhance the resources of the ACEC."

The Work Plan properly affirms in Section 3.1 (p. 3-3) that, as requested by EPA, GE will take into account in its analyses of ARARs the implications of the Commonwealth's designation of the Upper Housatonic River as an ACEC. Because of the importance of this issue, DFG and DFW request that EPA (1) condition any approval of the Work Plan to reiterate the need for GE to complete a thorough analysis of the

ARAR implications of the ACEC designation in the revised CMS, including under the relevant DEP's regulations, and (2) affirm that EPA will consider the ACEC designation when it evaluates the alternatives and ultimately selects the remedy for ROR.

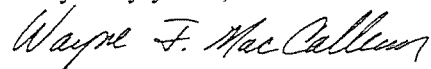
In closing, DFG and DFW appreciate EPA providing another opportunity to publicly comment on ROR remedy process, in this case on GE's Work Plan for the revised CMS. We look forward to working closely with EPA and GE as the latter develops the revised CMS.

Sincerely,



Mary B. Griffin
Commissioner

Very truly yours,



Director

cc: Fisheries and Wildlife Board
Ken Kimmell, General Counsel, EEA
Laurie Burt, Commissioner, DEP

UNITED STATES GOVERNMENT



U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Admin.

National Ocean Service
Office of Response and Restoration
c/o EPA Office of Site Remediation and Restoration (HIO)
1 Congress Street
Boston, MA 02114
10 September 2009

Ms. Susan Svirsky
U.S. EPA Office of Site Remediation and Restoration
1 Congress Street
Boston, MA 02114

Dear Susan:

I received the Housatonic River - Rest of River Work Plan for Evaluation of Additional Remedial Alternatives dated August 2009 directly from GE and below are a few comments relating to their plan of study. As stated before, NOAA has settled their NRD claim with GE and the site is well upstream of NOAA trust resources; hence, the few comments below are more academic than regulatory.

1. The entire Ecologically Sensitive Alternative (ESA) process has routinely puzzled me since its inception in late 2008. I am aware that EPA requested GE to provide more "additional information and analyses regarding the alternatives evaluated in the CMS Report" but I had envisioned that as a step in improving what was already a good start to a list of feasible projects. The new ESA process will add well over a year to the decision-making whereby the original CMS, if improved, could have been used to already reach a compromise remedy. In fact, in my opinion, it didn't need a complete overhaul rather just more supporting data (much like this document promises for the introduced ESA). This delay is really unnecessary. As of March 2008, I felt that those individuals who wrote the CMS, along with EPA, the States of MA and CT, and other stakeholders had enough information to reach a settlement protective of human health and the environment.
2. Section 2.1.1 Underlying Rationale and Principles. I agree that any remediation that takes place in the PSA will result in at least temporary disruption to the river habitat and to those organisms that utilize that resource. And a bank to bank, top to bottom, removal of the sediment may result in more harm than good. But much good comes from removing as much PCB sediment as possible and the authors fail to mention that benefit. In fact, they report that replacement of riverbanks post sediment removal is not practicable and that's just not true. Much success in restoring riverbanks has taken place around the country, for example the upper Connecticut River and the Chesapeake Bay region among many others.
3. Section 2.1.2 Description of Elements of ESA. I have few issues with the plan given that it is clearly one that attempts to balance the extremely high PCB concentrations and concurrent risk with cost and habitat. It is what I expected but, as stated above, it is not so different or innovative that it could not have been entertained during technical discussions concerning the original CSM, thereby quickening the pace to a remedial plan.

One suggestion is for the ESA to include a long-term plan to remove PCB laden sediment from the deepened Woods Pond. If indeed Woods Pond will be deepened without a subsequent cap and not all PCBs will be removed upstream, then the Pond will become a depositional location for sediment moving downstream. And this sediment likely will contain high levels of PCBs. GE should entertain a contingency for removal of such sediment from the deepened Woods Pond above an agreed upon concentration.

GE offers Monitored Natural Recovery (MNR) as the remedy for those areas not identified for removal. I would find this more agreeable if details concerning what concentrations and/or biological impairments would trigger additional removal. As it stands now, I worry that this is just another term for “No Action”. That, because I know of no site where MNR later resulted in an engineered remedial measure.

4. Section 2.1.3 General Remedial Approach – Restoration. This section is of much interest to NOAA and I accept GE’s explanation that they will provide further detailed information later in their in-depth evaluation.
5. Section 2.2.1. The SED 9 alternative cannot be more different than the ESA in terms of the extent of contaminated sediment removal and isolation. Not that I am surprised that EPA and GE are considering vastly different approaches just that the original CMS Report could have been used as a starting point to negotiate a settlement with these two alternatives as starting points for each side. Again, as my comment 1 above complains: a year is wasted.

Concerning the text, it is impossible to determine the merits of either remedy – the ESA or SED 9 – as residual PCB concentrations and likely injury are not provided herein. I expect the in-depth evaluation will fairly tell the reader the benefits of each sediment remedy. The reader needs to know the PCB volume removed, the residual PCBs left bioavailable, and an estimate of injury, both temporally and spatially, to natural resources under each alternative.

6. Figures. I would like to see the exact boundary between the Reaches. For example. Figure 2-1a shows Reaches 5a and 5b but the boundary between the two is not shown.

Please contact me with any questions or comments. I appreciate your continued coordination with NOAA despite our NRD settlement with GE from 2000.

Sincerely,

Kenneth Finkelstein, Ph.D

CC: Jim Murphy (EPA)
Ken Munney (USF&WS)

To: Susan Svirskey/R1/USEPA/US@EPA
From: Kenneth_Munney@fws.gov
Date: 10/23/2009 04:05PM
cc: Dean Tagliaferro/R1/USEPA/US@EPA, Ken.Finkelstein@noaa.gov
Subject: Work Plan for Evaluation of Additional Remedial Alternatives

Susan,

Thank you for the extended opportunity to provide informal comments on GE's Work Plan for Evaluation of Additional Remedial Alternatives for the Rest of River portion of the Housatonic River. FWS formally commented or informally discussed many of these issues with EPA previously. The following are informal technical comments on various aspects of the Work Plan:

Section 2.1.1: We agree that the riverine and floodplain areas of the ROR contain varied and valuable habitat. We also agree that remediation would severely impair short-term function of all remediated areas. However, we do not agree that PCB removal and habitat restoration is impractical or incapable of restoring a large-degree of the functions and values of impacted habitats over the long-term.

Section 2.1.2: The elements of the ESA are notable but are so restrictive that they severely curtail the ability to attain a comprehensive clean-up. In essence, they guarantee minimal cleanup of contaminated sediments and soils and preservation of chemically impaired habitat. Several additional issues with the elements are as follows:

1. "High concentration of PCBs" should be qualified with a scientifically defensible action level, i.e. >IMPG.
2. It would be helpful to overlay areas of EPA acceptable human health risk attainment and areas of non-acceptable ecological risk attainment to understand how these two risk issues compliment each other in the ESA scenario.
3. Area size and density of fauna/flora species of concern need to be qualified.
- 4/5. Provide rationale for level of acceptable contamination to be left in vertical riverbanks/riparian corridor and how residual PCBs in unremediated areas will contribute to residual ecological risk.

In 5A, it is unclear why small sections of river will be remediated only to have contaminated sections of river immediately upgradient unremediated. This would infer that erosion and bed transport of upstream unremediated contamination would effectively recontaminate these dredged areas. GE should provide rationale to justify this seemingly incongruous approach. This is also applicable to the dredging of Woods Pond, which will receive the bulk of sediment contamination from unremediated portions of 5B and 5C for many years. This would appear to be a set-up to allow recurrent dredging of Woods Pond at various or set intervals to deal with accumulated PCB-laden sediments from 5A/5B/5C. If this is the case, GE should provide calculations for how often it would have to dredge Woods Pond, what action level would trigger dredging and how long contamination would exist in upstream areas along with levels of residual risk for all areas, including Woods Pond.

As stated, the ESA only provides specific removal criteria in two instances - to attain EPA HH risk

standards and in Woods Pond where concentrations are >13ppm. GE should provide rationale for removal of sediments/soils in all areas and residual risk associated with removal and non-removal.

Large sections of 5A and almost all riverine/floodplain areas of 5B and 5C are determined to be unworthy of remediation based on the ecological principles and elements postulated for the ESA. We highly disagree with the basis of the ESA, as applied, and the proposed minimal remedial actions. In fact, using the ESA process, as proposed in this Work Plan, will result in much time and effort on the part of GE and reviewers for a far less than supportable remedy.

Section 2.2.1.1: Similar concerns related to removal criteria are applicable for the SED9 alternative. Where there is not a set removal depth, i.e. riverbanks, GE should state what the removal criteria are, rationale for that criteria, and residual risk from soils/sediments not removed or contained during removal activities. In all areas where set removal depths are proposed, it would be beneficial to know if PCB contamination exceeds criteria in all areas at depth. If this is not the case, then less sediment removal may be adequate to achieve criteria protectiveness in specific areas, incurring less cost for removal, disposal, capping and restoration.

We do not feel, as stated previously, that a one foot cap is adequately protective to guard against all biotic and abiotic disturbance factors that may come into play over the long term, if residual contamination at depth exceeds media protection criteria. Removal and capping of an additional 6-12" of sediments, where applicable, would be more protective and help to insure short and long-term stability of remnant sub-surface PCB contamination.

Section 2.2.1.2: The time schedule for completion of SED9 is extremely protracted. We realize this is a very complex and challenging approach for remediation but higher volume production rates need to be considered. Current timelines for completion of this alternative (27 years) will most likely be negatively received by the public and effectively undermine furthering this alternative. Appendix C assumes only 198 working days per year (between March and November) which needs to be extended to a more aggressive full year calendar, if possible. We recommended wet excavation of 5A/5B (previously) in hopes that it would expedite remedial timelines. It would be beneficial if wet versus dry excavation comparisons could be performed with a more aggressive remedial schedule. If wet excavation only allows minimal reduction in remedial processing then it may be more beneficial, from a PCB removal effectiveness standpoint, to continue dry excavation in 5A/B, similar to the 2 mile remedial approach. In-stream use of heavy equipment for wet excavation in shallow sections of 5A seems undesirable and avoidable.

Section 2.2.2.1: GE should provide rationale for removal of floodplain soils at or above 50 ppm and residual risk, relative to ecological receptors, associated with an elevated residual PCB concentration. Furthermore, it should be stated how average concentrations will be determined for specific areas or how removal criteria will be applied.

Vernal pools may act as depositional sinks and accumulate non-remediated PCB floodplain soils. Floodplain soils with PCB concentrations > amphibian IMPGs (3.27 ppm) but less than 50 ppm may impact remediated vernal pool areas during successive flooding events and associated contaminated soil transfer. Residual PCB concentrations above IMPGs for all biota, and associated ecological risk, should be addressed.

In general, SED 9 provides an aggressive set of remedial options that is relatively close to those we proposed in our formal comments to the initial CMS. We are interested to see how this alternative compares with the remainder of the CMS alternatives in this next version of the CMS and how it is integrated into the six example area analysis.

Section 4.1: The general layout for the six example area analysis looks promising. As stated, remediation and restoration of a given area is not isolated in the landscape relative to abiotic or biotic function. Integration of an area's function and value across the landscape is integral to understanding how successful remediation and restoration will be in the short and long-term. This is especially true for species with larger home ranges, those that use varied habitat types to fulfill life functions or those dependent on services an area may transfer to other areas via food, water, organic matter, etc. As we have discussed previously, the long-term remediation efforts along with co-occurring restoration will result in a patchwork of habitat types as restored areas mature. It will be a challenging task for GE to evaluate

these six example areas in the context of remediated, restored and undisturbed areas juxtaposed across the landscape. Small and large-scale biotic and abiotic services will be in dramatic stages of flux for many years during and after the ROR project is completed. 'Impacts to a given example area' and 'impacts on a broader area' should not be discussed without also discussing the short and long-term benefits of the remediation/restoration. Detailed in-depth evaluation of the six example areas should provide a comprehensive understanding of the impacts and benefits of the various remedial alternatives relative to all stages of succession.

We realize that the detailed evaluation of the six example areas and the next version of the CMS require tremendous amounts of time and effort by all parties involved. We are hoping that they will go a long way toward answering many outstanding questions and further improve decision-making on the remedy for the ROR. In the final analysis, it seems that residual risk and long-term functions and values of the habitat are the important features - these issues are pivotal in weighing the remedial options and what we will be focusing on. We appreciate the continued coordination from EPA on ROR issues and look forward to the next phase of remedial discussions.

Best regards,

Ken Munney
USFWS
Environmental Contaminants
70 Commercial St - Suite 300
Concord, NH 03301
603-223-2541, ext.19
FAX 603-223-0104
Kenneth_Munney@fws.gov